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BEING THE ANNUAL REPORT OF THE ROYAL NAVAL BIRD WATCHING SOCIETY

Published 1967

ROYAL NAVAL BIRD WATCHING SOCIETY

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MEMBERSHIP

For details apply to the Hon. Secretary, R.N.B.W.S.,
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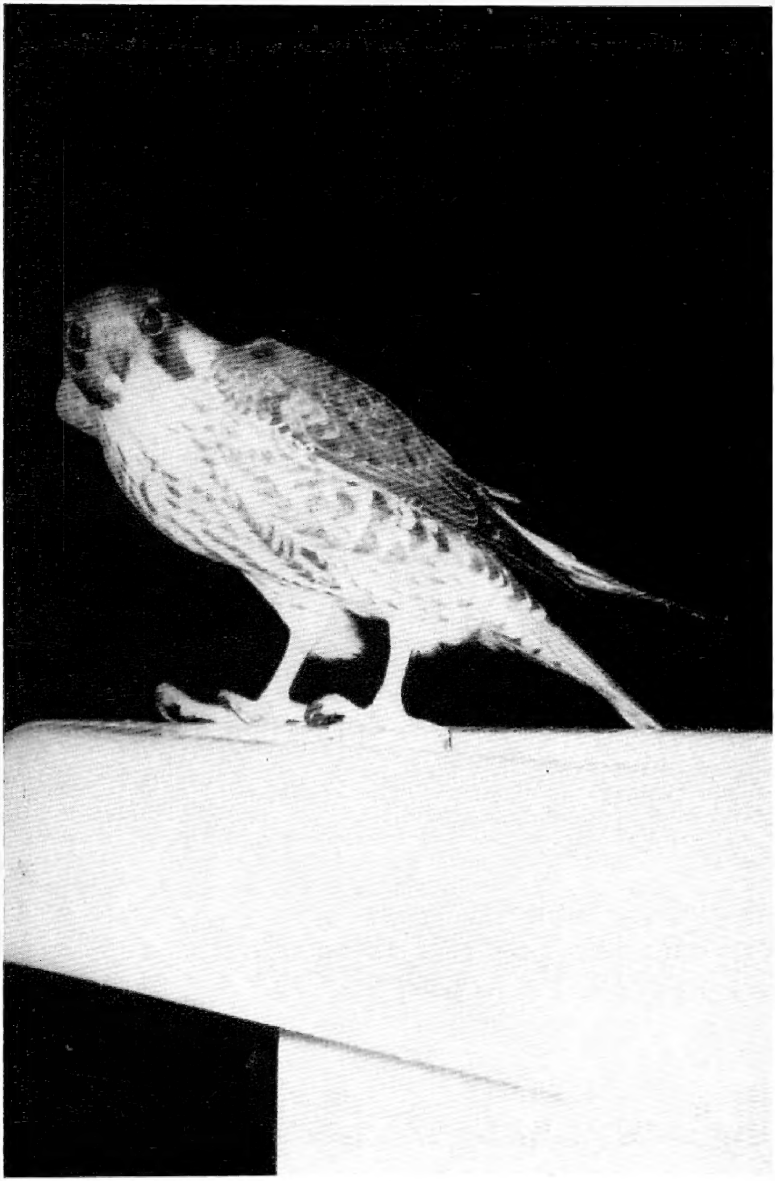


PEREGRINE FALCON—JUVENILE
Onboard H.M.S. "Dampier" 120 miles south of Hong Kong, 1966.
Photo: Lieutenant J. F. Shorthouse, R.N.

FOREWORD

I think we should congratulate ourselves on coming of age this year with R.N.B.W.S. as strong as ever, thanks largely to the enthusiasm of our Chairman and support from Members.

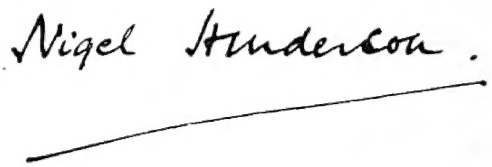
Twenty-one years ago when R.N.B.W.S. first came into being Admiral Sir William Tennant wrote in the first foreword to "Sea Swallow"—"If this generation is not careful succeeding ones will suffer and the tragic word 'extinct' will creep into bird lists."

In this modern scientific age man and birds tend to come more and more into conflict in certain spheres of man's activities. While man increases at an alarming rate, birds of certain species most beneficial in preserving the balance of nature become in danger of extinction. We know some of the principal causes, the thoughtless use of dangerous pesticides, the danger of oil pollution at sea, and other less evident instances which cause concern. It is well that powerful and authoritative bodies in the ornithological world exist to expose these dangers. R.N.B.W.S. members, be they sailing in oil tankers or surveying remote islands, would support any measures aimed to safeguard the rightful existence of our sea and land birds.

I am delighted that R.N.B.W.S. together with other service ornithological societies has been invited to become affiliated to the International Council for the Preservation of Birds, British Section. The continued study of sea and land birds by our members, and their activity in fostering interest amongst seafarers is in itself a factor in helping to safeguard our precious heritage of birds.

My time in Washington is nearly up. It has been an interesting experience getting to know some of the 440 species to be seen by bird watchers in Eastern North America, but it will be good to return to the birds of Europe. I recommend any R.N.B.W.S. member who may find himself in the United States to make contact with a local Audubon Society to get advice on where to go to see birds. I have found this a good way of getting to know the many people interested in birds as well as the birds themselves.

I send my best wishes to all members and others who give their support to our Society.



Head,
British Defence Staffs,
Washington, D.C.
B.F.P.O. 2.

EDITORIAL

DATE ON COVER OF 'SEA SWALLOW'

In the immediately preceding publication it was decided to quote the volume date in accordance with the year of its publication without however altering the progressive sequence of volume numbers. Thus for those who maintain successive volumes they will have noted that Volume 18 was dated 1966, the year 1965 being omitted. The current edition. 1967, is Volume 19.

CHAIRMAN AND EDITOR'S CHANGE OF ADDRESS

KINDLY TAKE SPECIAL NOTE THAT AS FROM 15TH SEPTEMBER, 1967, THE CHAIRMAN AND EDITOR'S NEW PERMANENT ADDRESS WILL BE:—8 LITTLE LONDON, CHICHESTER, SUSSEX, ENGLAND. TELEPHONE CHICHESTER 84617.

STATE OF SOCIETY

On 1st January, 1967, total membership stood at 288. In addition 37 ornithologists from 13 countries were corresponding members. Since then 10 new members and 6 new corresponding members have joined. Allowing for deaths and resignations membership now stands at 279 with 43 corresponding members.

EXTENSION OF FULL MEMBERSHIP TO NURSING OFFICERS AND NURSES OF QUEEN ALEXANDRA ROYAL NAVAL NURSING SERVICE

Nursing Officers of Q.A.R.N.N.S. have been a permanent and integral part of the Naval Service since 1902, the Naval Nurse Section being formed in 1960. Personnel of the Women's Royal Naval Service have been eligible for full membership since the formation of R.N.B.W.S. Following a request from the Matron-in-Chief that Queen Alexandra's Royal Naval Nursing Service personnel should be enabled to enjoy the same privilege I have, as Chairman, considered it equitable to agree in advance of formal confirmation at our next Annual General Meeting.

CHAIRMAN'S DEED OF COVENANT APPEAL

The response has been very encouraging, 53 additional members having executed Deeds as the means of paying annual subscriptions. We hope that other members will consider following suit.

REPORTS FROM SEA

The standard and diversity of reports has been particularly good, an unusual feature being the number of passage reports from the China and Java Seas, and the east and west coasts of South America. Excluding the monthly Ocean Weather Ship records, and we welcome the increased team of O.W.S. observers, the number of individual passage reports received up to date since 1st January, 1967, is as follows:—

Standard Sea Reports (sea birds)	41	passages
Census Sheet Reports (sea birds)	36	„
Sea Reports (land birds)	33	„

Reports of birds examined in the hand, sea birds 22, land birds 18.

SEA AND LAND BIRD PHOTOGRAPHY AT SEA

Thanks to the increasing interest shown by members the R.N.B.W.S. library of prints and slides continues to expand. A number of talks using R.N.B.W.S. slides has been given this year. Two R.N.B.W.S. photographs of albatrosses were included as illustrations in John Warham, W. R. P. Bourne and Sir Hugh Elliot's article on "Albatrosses identification in the North Atlantic" published in the September, 1966, issue of "British Birds."

Quite a number of original prints and enlargements have now become a little the worse for wear through displays in exhibitions. If any members have original negatives of prints forwarded in the past which they do not require to retain, Captain Tuck would be very glad to receive them in order to have new prints or slides made. In such cases it is requested that the forwarder's name, identification of species, and if possible the area in which the photograph was taken and date are included with negatives.

EXTRACTS FROM METEOROLOGICAL REPORTS

The regular extracts from merchant ships' "met logs" kindly forwarded by Commander L. B. Philpott are a continuing source of interest. The policy of informing ships individually where it has been possible to advise upon identification is being continued. I fear that many descriptions still defeat one's imagination. All Merchant Navy personnel are of course eligible for membership of R.N.B.W.S. and our Society would welcome applicants. The annual subscription is only 15/-. Write to the Hon. Secretary.

NEWS FROM OTHER QUARTERS

Numerous requests of one sort or another have been received from outside sources, principally from persons embarking on sea passages, visiting such places as the Falkland Islands, South Georgia, Iceland, and elsewhere. It is gratifying to do our best to assist and in this respect I would wish to pay tribute to Dr. W. R. P. Bourne and Lieutenant Commander E. S. W. Maclure for their invaluable help in furthering the work of R.N.B.W.S.

Early in 1967 the B.B.C. Natural History Unit sought our assistance in connection with a projected T.V. "Look" programme to cover sea birds to be encountered during a passage from the British Isles to Australia. Mr. Roderick Dobson who is undertaking the filming spent some time with Dr. Bourne and Captain Tuck studying our detailed sea bird route list and photographs. Although the sea birds on this route are well known, how many will come within camera range during a single voyage is a chancy business, but we look forward to 35 minutes of undiluted pleasure from a successful outcome.

ALDABRA ISLAND. A THREAT TO ITS UNIQUE FAUNA AND FLORA

By the invitation of the Royal Society, R.N.B.W.S., amongst many other societies has been kept in touch with developments in connection with the possible use of Aldabra as a Ministry of Defence air staging base and B.B.C. transmitting station. Lieutenant Commander R. O. Morris, R.N., who has visited Aldabra, represented R.N.W.B.S. at the Royal Society's initial meeting. It is evident that the implementation of

such a project will do irreparable harm to the very survival of the unique species which occur on the island, so in 1966 a Royal Society expedition led by Dr. D. R. Stoddart carried out an initial survey. Aldabra lies more or less midway between Dar-es-Salaam and the northern end of Madagascar, and due to its position and isolation retains unique species of fauna and flora. The establishment of such a base with the probable introduction of predators in the form of cats, dogs and rats would inevitably exterminate many species. Apart from the immense breeding population of frigate-birds and red-footed boobies, in themselves a grave danger to aircraft, egrets, herons, and terns are plentiful and many other land birds, amongst them the flightless rail, endemic fody, sacred ibis, and a small residue of flamingoes. The island also has a dense population of the giant land tortoise in its one remaining sanctuary other than the Galapagos, and is the major breeding ground of the green and hawksbill turtles. The Royal Society with the support of many other national and international bodies has now represented most strongly to the Ministry of Defence and B.B.C. the undesirability of implementing their projects on this island. With the co-operation of the Ministry of Defence a further expedition is visiting Aldabra in August, 1967, taking passage in H.M.S. Vidal. It is indeed welcome news to hear that the Ministry of Defence has now shelved the project. It is to be hoped it will never be revived.

RESIDENT RADIO OPERATOR IN SOUTH GEORGIA

L. R. O. (G) Howarth, a new member, has been appointed to this post and is looking forward to visiting sea bird colonies and furnishing reports. He has been supplied with a copy of Lieutenant Commander R. O. Morris' map of the breeding colonies in the area and other relevant information.

OCEANIC SURVEYS BY H.NETH.M. SURVEY SHIPS

During 1966, H.Neth.M. Survey Ships 'Snellius' and 'Luymes' were continuing oceanographic surveys in the North Atlantic. Scientific personnel from the Free University of Amsterdam and the State University of Leyden, represented by Messrs. R. de Jong, C. Smeenk, and J. Wattel undertook ornithological observations, using R.N.B.W.S. forms. In all 46 Census Sheets (sea birds) and 25 Sea Report Sheets (land birds) of excellent quality were kindly forwarded to the Society through the Hydrographer of the Netherlands Navy. We are most grateful for this valuable co-operation.

THE INTERNATIONAL COUNCIL FOR BIRD PRESERVATION —BRITISH SECTION

R.N.B.W.S. has accepted with pleasure an invitation to become an Affiliated Society to the I.C.B.P. British Section.

This world wide organisation has national sections operating in 58 countries. We hope that with our members visiting so many parts of the world opportunities will arise for R.N.B.W.S. to be of some service to this great and worthy organisation.

APPOINTMENTS

Superintendent Marion Kettlewell who has been in charge of the W.R.N.S. Training Establishment, H.M.S. Dauntless, has been appointed

Director of the W.R.N.S. in succession to Commandant Dame Margaret Drummond and is taking up her new post in June, 1967. Marion Kettlewell is a life member of R.N.B.W.S., and we congratulate her warmly on ascending to an unusual vantage point for a Wren—at the top of the tree!

Norman Lynagh, who has done so much to inspire and develop the Ocean Weather Ship R.N.B.W.S. observer corps, has taken up a new post with the Australian Bureau of Meteorology and will have opportunities, we hope, for new fields in sea-bird observation. We wish him every success in his new post. His address is c/o Bureau of Meteorology, Corner Victoria and Drummond Streets, Carlton, Victoria.

OBITUARY

It is with much regret that we record the deaths of Captain Sir Lewis Ritchie, K.C.V.O., C.B.E., R.N., well known under his pen name of 'Bartimeus,' and Captain A. G. Forman, D.S.C.,* R.N. Both were original members of R.N.B.W.S.

G. S. TUCK,

Editor.

SPECIAL REVIEW: THE WRECK OF THE *TORREY CANYON*

By W. R. P. Bourne

"The wreck of the Torrey Canyon" by Crispin Gill, Frank Booker and Tony Soper, 1967. Published by David & Charles, Ltd., Newton Abbott, distributed by Ward Lock & Co. Ltd., 128 pp. 16 pl., price 21/-.

"Conservation and the Torrey Canyon," ed. Kenneth Watkins and Ian Mercer, 1967. Supplement to the Journal of the Devon Trust for Nature Conservation, Ltd., Slapton Ley Field Centre, Slapton, Kingsbridge, Devon. 72 pp., 5/-.

"At Man's Door the Crime" by Leslie Hicks, 1967. Obtainable from L. F. & V. D. Hicks, Polgreen Vean, St. Newlyn East, Newquay, Cornwall. 34 pp., 30 pl., price 3/6 (proceeds to be donated to the R.S.P.C.A.).

For a month in the spring of 1967 all the newspapers devoted much space, and banner headlines, to the tale of the oil tanker *Torrey Canyon*, from the wreck on the Seven Stones reef off the Scillies on 18 March, through the attempts to salvage her and the death of the salvage captain over the next week, then the gale that broke her back and brought the first oil ashore, the bombing to fire the wreck on 28–29 March, and the trail of havoc along the Cornish and Breton coasts as the remaining oil came ashore. By the time the incident had run its course so much had been said and written that most of us must have lost track of what actually happened. This review summarises the first eye-witness accounts of interest to ornithologists. The scientific reports of the consequences, and their repercussions, seem likely to be drawn out to the crack of doom.

The most important immediate record of the disaster is undoubtedly the book whose title serves also for this article. Produced by three west country authors and journalists and a local publisher, it was a remarkable feat to have it out only just over three months after the ship struck. It provides a good, straightforward, dispassionate account of the wreck and its immediate consequences in Britain (there is less about France) down to the finding of the Liberian Court of Enquiry on 2 May that the fault lay with the Master. There is less about the parallel finding of the Inter-governmental Marine Consultative Organisation that in fact the oil industry and tanker captains also need to take measures to put a stop to the increasing incidence of such accidents. One would expect most mariners to find the first three-quarters of the book telling of the ship and her fate, illustrated with the best of the many pictures taken, of professional as well as ornithological interest.

In a further twenty-five pages Tony Soper gives a broad outline of the biological consequences of the wreck, with pride of place to the awful holocaust of offshore diving birds, though the even greater but less obvious havoc among other shore life is also mentioned. In addition to his description of the magnificent attempt made to rescue the doomed birds, and an appendix describing the methods used, he also describes excursions around the stricken coast by research vessel and helicopter at the height of the disaster, which showed that a good many birds carried on as usual and survived, and gives the main pieces of evidence on which subsequent estimates of the damage will have to be based. These are the tables on pages 110 and 111 supplied by the Royal Society for

the Prevention of Cruelty to Animals listing the 7,851 birds brought to the cleaning stations, and the 479 that survived being cleaned ("rehabilitated" is a misleading term for them; even then rehabilitation had hardly started); and the list on page 99 supplied by the British Trust for Ornithology recording the first fifteen ringing recoveries.

Other organisations have helped fill in details of the picture; the Seabird Group with a general account in "Seabird Bulletin" 3, and the first results of the subsequent breeding census carried out in conjunction with the Cornwall Bird-watching and Preservation Society for the Nature Conservancy in "Seabird Bulletin" 4; the British Trust for Ornithology in "B.T.O. News"23; the Royal Society for the Protection of Birds in "Birds" 1 (10), and the R.A.F. Ornithological Society in the third number of their Journal; but without changing the main picture. The main additional information now available, pending the appearance of the main results of wing counts* and subsequent breeding surveys, relates to the damage in France, described in the journal of the French protection organisation, "L'homme et l'oiseau" 9 (1). The oil arrived there later than in Britain, on 10 April, and the ratio of species among 651 birds treated at Perros Guirec was rather different, 390 Razorbills, 110 Guillemots, 100 Puffins, 15 Shags, 10 Gannets, 10 Black-throated Divers, 8 Slavonian Grebes, 4 Herring Gulls, 2 Red-throated Divers, a Great Black-backed Gull and a Common Scoter; but here also there was at least a 90 per cent mortality in treatment, and it is feared that the main remaining sea-bird colonies in north-west France, which were all more or less invested by the oil, have suffered very severely indeed.

If we add the French figures to the British ones, the known mortality must be at least 10,000 birds. Taking just the R.S.P.C.A. figures, the Guillemot suffered by far the worst, forming 80 per cent of the kill, most of the rest being Razorbills and a few Shags and Puffins, and only occasional birds of other species; though the small total of grebes and divers may have included most of the winter population. The first list of fifteen ringing recoveries included seven Guillemots, four Razorbills, and four Shags, five ringed in the Scillies, five in the Pembroke islands, one on Bardsey off North Wales, and four on Rathlin off Northern Ireland. There have since been at least three more Auks recovered in France, one a Razorbill from the Outer Hebrides. The two Guillemots from the Scillies come from a population of only four ringed birds. The total mortality is hard to tell, with an unknown number of birds lost at sea and along rocky parts of the coast, but seems likely to be at least two or three times and possibly up to ten times the known figure, or anything from 25,000 to 100,000 birds.

The book refrains from speculation on the wider biological implications of the disaster or comment on their significance. This gap is filled by two other pieces of local enterprise, a popular account of the work of the best of the cleaning stations at Perranporth by Leslie Hicks which conveys some idea of the horror of the locals at the plight of the birds and their response to it; and a symposium organised by the Devon Trust for Nature Conservation, including a historical survey of attempts to combat oil pollution by Phyllis Barclay-Smith of the International Committee for Bird Preservation (who has done as much as anyone for this cause); eight surveys of a variety of kinds of non-ornithological damage to wildlife along the coast most of which stress how much

* See "Nature" 215 : 1123–1125.

worse the detergent used in cleaning operations was than the oil itself; and a final review of "oil and detergent pollution, past, present, politics and prospects" by Clyde Manwell and C. M. Ann Baker. The last is probably the most splendid piece of invective yet to come out of the disaster, lashing all forms of pollution. In addition to the home truths which they and the other authors in this symposium confront us with so liberally, the formidable collection of references that they cite deserve close study too.

SEA AND LAND BIRD OBSERVATIONS FROM BRITISH OCEAN WEATHER SHIPS IN THE NORTH ATLANTIC

Summarised by CAPTAIN G. S. TUCK, R.N.

Seabirds, landbirds, dolphins, blackfish and whales provide the pattern of visible life in the grey and often turbulent waters in which the 'Ocean Weather Ships'—the old Castle Class Frigates—stick it out while the meteorologists record the weather. Some stalwarts record birds for us!

During 1966 daily bird counts have been logged each month on which our recorders have been at Stations ALPHA (62°32'N, 33°W), INDIA (59°N, 19°W, JULIET (52°30'N, 20°W) and KILO (45°N, 16°W), each series of observations covering on average 23 days 'on station.'

Much thanks is due to Messrs. E. D. Macdonald, N. Lynagh, J. Fowler, A. J. Odell, R. B. Dyer, R. J. Burness, J. G. Lewtas and C. C. E. Jackson for their excellent Census Sheet reports, examination forms and photographs obtained.

PRESENTATION OF OBSERVATIONS

Separate tables A and B have been prepared for seabirds and landbirds, the total number per period and average per day of each species counted being shown under each Station in sequence of months. Only birds positively identified are recorded, and this has caused very little difficulty with the exception of terns and storm-petrels. In these latter groups identification of individual species has been far from certain and numbers shown refer to block totals of tern s.p.p. and storm-petrel s.p.p.

* = very large numbers, 50–100 plus daily
† = large numbers, 50 plus daily
a = adult plumage
i = immature plumage
av 20 d = average of 20 seen daily
(d) = species seen each day on station

SEABIRDS—GENERAL PATTERN EMERGING FROM 2 YEARS' OBSERVATIONS 1965 AND 1966

Note: ALPHA is about 300 miles W x S of Iceland
INDIA is about 250 miles S of Iceland
JULIET is about 360 miles W x S of Ireland
KILO is about 350 miles WNW of Cape Finisterre.

Not all the species observed call for special mention. Those quoted are listed in the order in which they appear in the table.

GREAT SHEARWATER. One or two only were first seen at ALPHA in late June/early July in 1965, but none had appeared here by the end of June 1966. Further east and south at INDIA they were putting in an appearance in small numbers in July/August both in 1965 and 1966. Further south still at JULIET we find 228 reported during the last fortnight of September and first week of October in 1965. In the last fortnight of August and in September 1966 over 2,500 were counted here, and an enormous concentration of 6,181 birds occurred in October. There have been no records at any of these three Stations after October.

It seems possible that this concentration around JULIET may constitute the main stream of Great Shearwaters moving south on autumn migration from their summer quarters off Newfoundland and Greenland.

SOOTY SHEARWATER. Very few have been seen either in 1965 or 1966, only 2 before late June, 1965, at ALPHA, a total of 40 in July and August, 1965/66 at INDIA, and 26 principally in September and October, 1965/66, at JULIET. There have been no records at any Station after October.

MANX SHEARWATER. It does not appear that Manx Shearwaters range as far north and west as ALPHA, and they have only been recorded in small numbers (less than 10 per month) at other stations and never after October with one notable exception. Both in 1965 and 1966 in March/April the birds were appearing at JULIET (360 miles W x S of Ireland) when a total for both years of 81 was counted. Perhaps these birds were following a westerly route on return migration from South America.

STORM-PETRELS. During 1965 and 1966 only two birds, both Leach's Storm-Petrels, have been observed at ALPHA, and only a very few now and again at INDIA. During September and October 1966 however a concentration of 350 birds kept close around the Weather Ships at JULIET, one of which came onboard and was identified as Wilson's. The birds kept together in flocks and it seems probable that the majority, if not all, were Wilson's. Much further south at KILO (45°S 16°W), 132 Wilson's Storm-Petrels were counted in July, 1965.

FULMARS AND KITTIWAKES. Both species are always present, often in great numbers daily at all Stations except KILO throughout the year. Fulmars easily predominate from May to November, and Kittiwakes generally outnumber Fulmars from December to March. Very few Fulmars have appeared as far south as KILO, but very large numbers of Kittiwakes were reported there in January, 1966.

GANNETS. Gannets have occurred at all Stations throughout the year with greater numbers at all Stations except KILO throughout the Autumn and Winter.

GREAT SKUAS. In 1965/66 the greatest numbers were seen in the eastern quarter of the Atlantic particularly in March/April at INDIA (92) and JULIET (95) presumably on migration. Lesser numbers have been seen at ALPHA (18) in May doubtless moving northwards. None was seen at INDIA and JULIET from November onwards, but a large number (140) further south at KILO in January, 1966.

POMARINE SKUA. In 1965/66 these have been seen at ALPHA (48) in May. Similar numbers have been seen in May also at JULIET.

ARCTIC SKUAS. In 1965/66 very few have been observed at ALPHA (8) in the spring and summer months. They have occurred principally between 19° and 20°W in September (32).

LONG-TAILED SKUAS. These have been seen at ALPHA (10) in early June, 1965, at JULIET (38) in May, 1965, and at both INDIA and JULIET (16) in September, 1965/66.

THE GULLS. Greater and Lesser Black-backed Gulls are present at the three northern Stations, the Lesser Black-backs usually predominating at most seasons except July when both species are in almost neglegible supply! Herring Gulls occur in smaller numbers but again disappear almost entirely in July. Glaucous Gulls are almost entirely confined to Station ALPHA where 51 were seen in February, 1966, and only 2 in May/June.

LITTLE AUK. In April, 1966, an unusually large number (124) was recorded at JULIET, our observer, N. Lynagh, remarking that probably there were many more in the area as the little fellows could only be seen under the sea conditions when taking flight off the bow while the ship was steaming to regain station.

EXTRACTS FROM INDIVIDUAL REPORTS

Fulmars, Kittiwakes and individual gulls generally hang closely about the Weather Ships all day on the lookout for 'gash.' As darkness falls they drift away. Many of the same birds must return, numbers increasing throughout the day, but others, noticed on account of particular plumage variations, have be seen to be present only on one day so that an unknown number of replacements must occur.

C. C. E. Jackson mentions that at Station INDIA in June, 1966, it was noticeable that Fulmars would collect in pairs on the water in the evenings occasionally nuzzling each others bills and necks in nuptial caresses. N. Lynagh remarks that at ALPHA one day in May, 1966, the sea on all sides looked like a vast duck pond full of Fulmars while close around the ship a few Red-necked Phalaropes in full summer plumage sat lightly on the water for 2 hours making the prettiest possible picture.

All observers remark that the appearance of Great Skuas or Pomarine Skuas presages trouble. Almost invariably these marauders harry the Fulmars and Kittiwakes and several Kittiwakes have been seen to be killed by the Great Skuas. Fulmars join the attacker in a squabble over the carcass on the water.

C. C. E. Jackson has noted that Fulmars on the water successfully ward off Great Skuas when a group is attacked by cocking their tails upwards in a vertical fan and lifting their wings in an attitude aggressive enough to drive off any effective assault.

Gannets come and go, rarely close by, but sometimes inspecting ships for an hour or so and diving when fish are in the vicinity. On one occasion a Gannet was seen with ten inches of tow caught in its bill, diving time and time again endeavouring to dislodge the appendage!

Terns and Auks are not interested in the ships and counts must miss many that pass by, but in general the numbers out in the Oceans appear to be few.

N. Lynagh observed quite a number of badly oiled Kittiwakes amongst the flocks at Station KILO in January, 1966. The oiled birds apparently kept continuously in flight, some however landing onboard when they were easily approached and handled. Where possible cleaning off oil was carried out and birds launched into flight once again. It is impossible to keep them onboard ships for lengthy reconditioning unfortunately.

To watch for the unexpected in bird behaviour adds spice to the routine task of making counts and I am grateful to our observers for the opportunity to pick and record extracts from their notes and letters.

If one looks at the positions of INDIA, JULIET and KILO on a chart, placed as they are one beneath the other roughly in a north/south line some 400 miles out in the Atlantic to the west and south-west of the British Isles one is struck by the variety of landbirds occurring so far out at sea. The trend of the winds at these two Stations during August and September, 1966, was certainly from an easterly direction and this may have been a factor in carrying the birds to the westwards. Certainly it is very noticeable that the majority of the small birds settling on the ships were very exhausted, indeed beyond survival, in spite of, or perhaps unaccustomed to, the varied diet they ate! as the examination forms show.

In table B an x denotes that a bird has been recorded in an examination form, and dd. that it died subsequently onboard.

WHEATEARS. These figure prominently at INDIA and JULIET, in August and early September at the northern Station, and in the latter half of September and early October at JULIET. Burness reports that the Wheatears at JULIET from 23rd to 26th September were of the Greenland race. Almost all Wheatears reported were females.

TURNSTONES. Turnstones were passing through JULIET in September and October, 1965. In 1964, 21 Turnstones were recorded at INDIA in the latter half of August. This adds some weight to a previous chain of plots of this species obtained from ships on passage (Sea Swallow, Vol. 17, 1964:40) indicating a possible direct ocean flyway from Iceland towards the bulge of North Africa.

MERLINS. One or two Merlins have been reported from time to time and in 1966 these occurred at ALPHA in May, at INDIA in late August and JULIET in early October.

Amongst the variety of other birds reported the Harlequin Duck comes as a surprise.

OCEAN WEATHER SHIP OBSERVATIONS—1966—SEABIRD TABLE—TABLE A.

	OCEAN STATION ALPHA 62° 30'N 33° 00'W 300 miles WXS ICELAND						OCEAN WEATHER STATION INDIA 59° 00'N 19° 00'W 250 miles SOUTH OF ICELAND							
	Feb. 6-25	May 12 June 3	June 5-28	Feb. 11 Mar. 6	April 1-22	May 19 June 9	June 9 July 6	July 5-17	July 25 Aug. 18	Aug. 20 Sept. 11	Aug. 27 Sept. 19	Oct. 7-24	Oct. 28 Nov. 19	Nov. 20 Dec. 12
NUMBER OF DAYS	20	23	24	24	23	22	28	13	24	23	24	18	23	23
Great Shearwater	—	—	—	—	—	—	1	—	12	2	45	—	—	—
Cory's Shearwater	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sooty Shearwater	—	—	—	—	—	—	3	—	1	8	9	—	—	—
Manx Shearwater	—	—	—	1	—	3	—	—	—	8	7	—	—	—
Storm-Petrels	—	1 (Leach's)	—	—	—	—	—	—	2	1	1	1	—	—
Fulmar Petrel	320	*5840	1055	*2723	*1208	*1624	843	303	*1560	*2010	*1960	*1640	576	*1185
Kittiwake	av 16 d. *1024	av 240 d. 522	av 44 d. 2	av 113 d. *1535	av 64 d. †1127(70i)	av 74 d. 75	av 30 d. 42(a)	av 3 d. 1	av 70 d. 45(8i)	av 100 d. 100(28i)	av 80 d. †117(3i)	av 90 d. 194	av 25 d. 117	av 50 d. 60
Gannet	av 51 d. 3(a)	av 23 d. (2/3 i) 22(9i)	— 12(5i)	av 64 d. 20(a)	av 50 d. 15(a)	av 3 d. 8(5i)	av 2 d. 61(30i)	— 4(a)	av 2 d. 12	av 5 d. 18(8i)	av 59 8	av 10 d. 10(a)	av 5 d. —	av 3 d. 1
Cormorant	—	av 1 d. 1	—	—	—	—	av 2 d. —	—	—	—	—	—	—	—
Red-necked Phalarope	—	6	—	—	—	—	—	—	—	—	—	—	—	—
Grey Phalarope	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Great Skua	1	11	—	10	61 av 3 d.	2	14	1	11	10	24 av 1 d.	—	—	—
Pom Skua	—	20	—	—	—	4	6	—	2	9	1	—	—	—
Arctic Skua	—	av 1 d. 2	—	—	—	—	—	—	3	2	7	—	—	—
Long-tailed Skua	—	—	—	—	—	—	—	1	—	—	6	—	—	—
Gr.B.B. Gull	291	8(4i)	—	147 (40i)	21	—	36(10i)	—	—	—	—	3(i)	19(i)	3(a)
Lr.B.B. Gull	av 14 d. —	28(10i)	—	av 6 d. 2(a)	90(a)	65(a)	av 1 d. 2	2	—	95 (3i)	23(5i)	—	—	2(a)
Herring Gull	—	av 1 d. —	—	26(20i)	av 4 d. 6(a)	av 3 d. —	26	—	1	5 (4i)	10(5i)	—	—	1(i)
Glaucous Gull	51(27i)	1	—	—	—	—	av 1 d. —	—	—	—	—	—	—	2
Iceland Gull	av 3 d. 9	2	—	4(2i)	—	—	—	—	—	—	—	—	—	—
Common Gull	—	—	—	2(i)	3	—	—	—	—	—	—	1	—	—
Black-headed Gull	—	6(a)	—	1	2(a)	1	—	—	—	3(a)	1	—	—	—
Sabine's Gull	—	3	—	—	—	—	—	—	—	—	—	—	—	—
Terns	—	—	3	—	—	—	—	1 (Roseate)	24	23	67	—	—	—
Little Auk	—	12	1	—	—	—	—	—	—	—	—	—	—	—
Razorbill	—	1	—	—	—	—	—	—	—	—	—	—	—	—
Common Guillemot	—	3	—	—	—	—	15	—	1	6	—	—	—	2
Brunnich's Guillemot	—	—	—	—	—	—	—	—	—	—	3	—	—	—
Puffin	—	—	—	—	—	1	—	2	—	—	—	—	—	—

		OCEAN STATION JULIET 52° 30'N 20° 00'W 360 miles WXS IRELAND					OCEAN STATION KILO 45°00'N 16°00'W 350 miles WNW Cape Finisterre
Mar. 28 April 24	July 3-25	Aug. 18 Sept. 4	Sept. 9 Oct. 2	Oct. 2-23	Nov. 20 Dec. 5	Dec. 7-31	Dec. 27 ('65) Jan. 20
28	23	18	24		16	25	24
—	1	836	‡1755	*4426	—	—	1
		av 45 d.	av 73 d.	av 200 d.			
—	—	—	—	—	—	—	—
—	7	3	5	9	—	—	—
43 (d)	1	—	4	2	—	—	—
2	8	4	255	95	—	—	—
			av 10 d.				
1157	879	154	324	*1855	216	470	15
av 40 d.	av 40 d.	av 8 d.	av 13 d.	av 80 d.	av 13 d.	av 20 d.	
*2402	7	85	47	178	90	1000	‡1085(180i)
av 85 d.		av 5 d.	av 2 d.	av 7 d.	av 6 d.	av 50 d.	av.45d.
28(d)	9(8i)	8(i)	18	19(4i)	—	—	18(4i)
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
55(d)	—	23	22	30(d)	—	—	140 av.6d.
5	—	5	14	7	—	—	—
1	4	12	2	3	—	—	—
1	—	—	6	—	—	—	—
14(9i)	—	5	3(i)	1	7(2i)	5(a)	8(6i)
91(7i)	4	20	17(10i)	2	1	—	5(a)
av 3 d.							
14	3(a)	—	11(9i)	2(i)	—	5(i)	2(a)
1	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	1
10(5i)	2	—	—	1	—	—	5(2i)
—	—	—	—	—	—	—	—
—	—	10	4	2	—	—	—
124	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	3	—	—	—

OCEAN WEATHER STATION INDIA
59°00'N 19°00'W
250 miles south of Iceland

MAY		
21.	1 White Wagtail. (Motacilla alba alba) X. dd.	Ate bread, egg yolk, died after 30 hours.
22.	2 Swallows X. dd. (Hirundo rustica).	Died after 1 day. Wind from 170° F4.
28.	1 Turtle Dove X. dd. (Streptopelia turtur).	Died after 3 days.
31.	1 House Martin X.	Wind from 240° F4.
JULY		
6.	1 Rock Dove. (Columba livia).	Wind light airs.
AUGUST		
18.	1 Dunlin. (Calidris alpina).	
21.	1 Wheatear.	Wind from E.S.E. light.
26.	1 Turnstone dd.	Ate oatmeal and bacon fat. Died after 1 day.
27.	4 Wheatears dd. 1 Ringed Plover dd. (Charadrius hiaticula).	Wind from E.S.E. 20 knots. All very weak and died.
28.	4 Wheatear.	Very weak. Died after 1 day.
29.	3 Wheatear.	All flew off.
30.	1 Wheatear.	Wind from East 20 knots.
	1 Oystercatcher. (Haematopus ostralegus).	Wind from N.N.E. 10 knots.
	1 Meadow Pipit. (Anthus pratensis).	
31.	1 Wheatear.	Wind from N.E. 15 knots.
SEPTEMBER		
1.	1 Ringed Plover.	Wind from N.N.E. 20 knots.
2.	2 Meadow Pipits.	
3.	1 Lapland Bunting X. 4 Wheatears.	Onboard until Greenock. Ate "Swoop".
	1 Ringer Plover.	Wind variable light.
4.	1 Lapland Bunting dd.	Very weak. Died.
	1 Wheatear.	Wind from E.S.E. 31 knots.
5.	2 Wheatears.	
6.	9 White Wagtails.	Wind from E.S.E. 30 knots.
10.	1 House Martin.	
12.	2 Wheatears.	1 died overnight. Wind from North 10 knots.
	2 Lapland Buntings.	1 onboard until Greenock. Ate "Swoop".
21.	2 Merlins.	Male killed a Wheatear.
22.	1 Merlin.	
27.	1 Wheatear.	
OCTOBER		
7.	1 Redwing. (Turdus musicus).	Wind from N.E. F4.
10.	1 Brambling X. dd. (Fringilla montifringilla).	Died.
11.	1 Sedge Warbler. (Acrocephalus schoenobaenus)	Wind from N.N.W. F3. Onboard 1 hour.
12.	1 Whimbrel. 2 Wheatears.	Onboard 3 hours.
	1 Purple Sandpiper X. (Calidris maritima).	Wind from N.N.E. F4.
	2 Snow Buntings X.	Ate cheese, breadcrumbs.
18.	4 Starlings.	Ate breadcrumbs.
20.	(Sturnus vulgaris).	Wind from N.N.E. F6. Wind between N. and W. F3.
24.	1 Harlequin Duck. H. histrionicus.	1 hour alongside, v.g. visibility reported positive.
	1 Long-tailed Duck. (Clangula hyemalis).	2 hours alongside.
25.	1 Common Scoter. (Melanitta nigra).	1 hour alongside. Attacked by Fulmars.
NOVEMBER		
1.	1 Eider Duck.	Alongside. Wind light airs.

OCEAN STATION JULIET
52°30'N 20°00'W
360 miles WXS Ireland

AUGUST		
12.	1 knot. (Calidris canutus).	Onboard. Observed from 12 feet Flew off S.S.W. Wind from N.N.E. 16 knots.
27.	1 Turnstone X.	Onboard 34 hours.
28.	2 Wheatear.	Wind from S.W. 12 knots.
SEPTEMBER		
9.	1 Turnstone.	Wind from West 17 knots.
15.	2 Turnstones X.	1 bird fed onboard for 14 days. Ate tinnel fish and insect preparation.
21.	1 Wheatear.	
	2 Meadow Pipits.	Onboard.
	1 Kestrel. (Falco tinnunculus).	Onboard 5 days. Ate meat. Wind from East 8 knots.
	8 Turnstones.	Alighted close to ship.
	1 Grey Phalarope. (Phalaropus fulicarius).	
22.	C. 20 Wheatears.	
	1 Pied Flycatcher. (Muscicapa hypoleuca).	Wind from S.E. 8 knots.
	1 Redstart. (Phoenicurus p.).	
	1 Grey Phalarope.	Settled on water close to ship.
23/	12 Wheatears 1X. dd.	Very tired. Fed with insects. Died.
26.	1 Reed Warbler X. dd. (Acrocepalus scirpaceus).	Very tired. Fed with insect food. Died, very tired.
	2 Garden Warblers. (Sylvia borin).	Wind from S.E. 15 knots.
	2 Meadow Pipits.	
27.	1 Wheatear.	
OCTOBER		
	1 Merlin.	Wind from E.S.E. 20 knots.
2.	1 Wheatear.	
	4 Turnstones.	All in winter plumage. Onboard.
3.	2 Merlins.	
6.	1 Wheatear.	
11.	1 Snow Bunting X. dd	Died after 30 hours onboard.
13.	1 Common Sandpiper. (Tringa hypoleucos).	Wind from West 15 knots. About ship all day.
	1 Whitethroat. (Sylvia communis).	Onboard.
15.	1 Red-throated Diver. (Colymbus stellatus).	Swimming close round ship. Wind from South 10 knots.
	1 Blackcap X. dd.	Exhausted, died.
23.	1 Starling.	Wind from South by East 25 knots

OCEAN STATION ALPHA
62°30'N 33°00'W
300 miles WXS Iceland

MAY		REMARKS
12	1 Wheatear. (Oenanthe oenanthe) X.	Average wind from 080°, 20 knots.
	1 Snow Bunting. (Plectrophenax nivalis) X. dd.	Died after 1 day. Very weak.
	2 Whimbrels. (Numenius phaeopus) X.	
13.	1 Redshank. (Tringa totanus) X.	Onboard 2 days. Average wind—calm.
14.	1 Sanderling. (Crocethia alba) X. dd.	Died after 12 hours. Very weak. Average wind from 020° 10 knots.
25.	1 Merlin. (Falco columbarius) X. dd.	Ate raw steak. Died after 10 days.
JUNE		
12.	1 Turnstone. (Arenaria interpres).	Ate milk soaked bread. Average wind. Light airs.
26.	1 Eider Duck. (Somateria mollissima).	Ate cheese, cake, duff, bacon.

OCEAN STATION KILO
45°00'N 16°00'W
350 miles WNW Cape Finisterre

JANUARY		
15.	1 Song Thrush X. dd. (Turdus ericetorum).	Died on 16th January. Average wind. Light airs.
	1 Meadow Pipit X. dd.	One of group of Song Thrushes and Meadow Pipits. Fell into sea and was rescued but died.
18.	1 Redwing X. dd.	Found dead with broken wing.

THE GUANAY COAST

Summarised from the detailed passage reports of
2ND ENGINEER J. O. BRINKLEY (now Chief Engineer)

A comprehensive passage report on seabirds contributed by Second Engineer J. O. Brinkley includes a tabular statement of the numbers of every species observed daily throughout daylight hours at sea, together with a similar statement in harbours, with remarks on behaviour and detailed examination forms of those birds taken in the hand onboard with sketches and photographs of the distinctive features of the storm-petrels. This summary aims to give the pattern of seabird life without undue repetition.

There is nowhere at sea in the world where you will see so many seabirds daily, sometimes in enormous numbers, as when cruising along the west coast of South America. The cold Humboldt Current supplies such an abundance of surface feed in which Anchovies play a leading part, that for centuries millions of seabirds have thrived and multiplied along the whole length of the coastline. During the southern winter months many southern oceanic seabirds move northwards, and there is further evidence in this report that within the limits of the Humboldt Current individuals may occur at least as far north as 8 degrees south.

During June, 1966, Brinkley was sailing in M.V. *Oswestry Grange* coastwise down the west coast calling at two ports in Equador, four in Peru and nine in Chile. Over a week was spent at Samanco Bay, Peru, at Valparaiso and at Talcahuano Bay, the most southerly port reached at 37°S.

The northward passage in July as far as Chimbote, Peru, was well to seaward by Rhumb Line route most of the way, and the difference in seabird population was very noticeable. Fish meal was loaded at Chimbote on the northward run. Perhaps the smell of this cargo resulted in the remarkable arrival onboard during the night of 24th July of such a welcome assortment of storm-petrels, to be discovered all over the place on the morning of 25th July at 4½°S, 81¾°W, the ship proceeding close inshore.

The birds ringed with National Institute of Oceanography rings next day included:—2 Pink-footed Shearwaters, 25 Wilson's Storm-Petrels, 23 ringed and 6 measured; 2 Elliot's Storm-Petrels, 1 White-bellied Storm-Petrel, 8 Galapagos Storm-Petrels, 4 measured and ringed; and 2 Hornby's Storm-Petrels. During the whole trip 45 different species of seabirds were identified and the total ringed rose to 40.

SOUTHBOUND PASSAGES AT SEA. 5th JUNE–6th JULY

(The seabirds seen daily in harbours, where time allowed counts to be made, are recorded separately.)

The southbound run was entirely coastal and it is this aspect rather than the exact longitudes which is material to the observations; the average longitudes may be taken as between 80°W off mid Peru at 10°S, rapidly becoming 75°W at 16°S and thence 71½°W to Valparaiso. A study of the daily counts at sea shows that every day from 8°S, 80°W to Valparaiso at 33°S, 71°W, great flocks of up to 500 Chilean Pelicans and similar numbers of Peruvian Boobies and Guanay Cormorants were seen constantly, while Red-legged Cormorants and

Bigua Cormorants appeared only close inshore, especially in harbours. At sea daily counts of Grey Gulls and Southern Black-backed Gulls following the ship ran into hundreds. There were smaller numbers of Simeon Gulls, the highest count in daylight hours being 150 at Matarani, Peru, 17°S, after which numbers began to disappear from the north Chilean coast southwards. Inca Terns were also seen daily in small numbers from central Peru to Valparaiso. Great Skuas were sighted in ones and twos between 9°S and 17°S, and again between 25°S and 33°S, but on one day up to 50 were seen. In addition to this pattern of daily sightings other species came into the picture: —

ALBATROSSES

Up to 4 or 5 Shy Albatrosses daily and up to 20 immature Giant Petrels daily were seen from 10°S onwards to 26°S between 15th and 23rd June. A juvenile Wandering Albatross was first seen at 26°S, with up to 20 daily, mostly immatures, as far as Valparaiso at 33°S on 26th June. Black-browed Albatrosses, first seen at 28°S on 24th June, increased from ones and twos to considerable numbers off Talcahuano Bay at 37°S. Three to 6 Buller's Albatrosses were seen only at 28°S.

SOOTY SHEARWATERS

The sighting of Sooty Shearwaters was a spectacular feature of the southward voyage. First encountered at 5°S on 3rd June, rafts increased from 100 to 2,000 at 11°S, to an estimated 20,000 in separate large flocks at 16°S on 18th June, visible on radar at a distance of 10 miles. Large sightings continued as far as 25°S after which only small parties were seen as far south as Talcahuano Bay. Pintado Petrels followed the ship in flocks of up to 50 daily from 20°S to Talcahuano; White-chinned Petrels were first seen at 28°S, with as many as 200 at 31°S on 25th June, and thereafter up to 10 daily. Southern Fulmars were not seen until 37°S, and only one or two at that.

COOK'S PETREL

This is quoted as the 'problem species' of the voyage. Individual birds were seen daily from 26°S but whether Cook's or Stejnegers' seems uncertain.

STORM-PETRELS

Here again positive identification at sea was rare, more especially in view of the variety of species which might have been in the area. Those positively identified include: — 5 or 6 Wilson's Storm-Petrels following the ship at 25°S (but many more 'probables' much further north), and up to 20 as far as 31°S. Markham's Storm-Petrels were seen close inshore in small numbers between 19°S and 20°S.

NORTHBOUND PASSAGES AT SEA. 16th JULY–25th JULY

Leaving Talcahuano, 37°S, 74°W, on 16th July one immature Wandering Albatross was seen and this was the only albatross sighted until reaching 4½°S, 82°W on 25th July when a Waved Albatross was identified.

The ship was already some 180 miles off the coast at 30°S, increasing to 240 miles at 20°S and only closing the coast midway up the

coast of Peru at about 15°S. For this reason the usual flocks of Pelicans, Boobies, Cormorants, Gulls and Terns were entirely absent, presumably because their food occurs inshore, and these were not seen until the ship again closed the coast at Chimbote. The Albatrosses, Shearwaters and Petrels also stayed nearer the coast.

In the event for the first two days only single Southern Fulmars and a few White-chinned Petrels were seen north to 29°S on 17th July although one or two Pintado Petrels followed the ship to 11°S. Occasional 'Cookilaria' Petrels were seen to 14°S, and one or two White-bellied Storm-Petrels from 24°S to 20°S on 19th July. Sooty Shearwaters, so prolific close inshore, were entirely absent until a flock estimated at 2,000 birds was sighted at 11°S, 78°W. Credit must be given to single Blue-footed Boobies which appeared at 20°S, 76°W and 14°S, 77°W on 19th and 20th July.

Leaving Chimbote on 24th July the daily count at 8½°S, 79°W gave over 50 Chilean Pelicans, 1,000 Peruvian Boobies, 200 Guanay Cormorants, 10 Great Skuas, a few Grey Gulls and Inca Terns, 10 Peruvian Diving-Petrels, 1,000 Sooty Shearwaters, 1 Pintado Petrel, 1 Antarctic Fulmar which 'glided past the ship at close range' and 2 White-chinned Petrels. The following day 2 Pink-footed Shearwaters and numerous Storm-Petrels were found onboard.

It is not intended in this account of the Guanay Coast to detail the seabirds commonly seen in the approaches to Panama Bay and the harbour at Balboa.

We must conclude the sea passage summaries and turn to some aspects of seabirds in harbours. Repetition becomes inevitable.

SEABIRDS IN HARBOURS

The pelicans and cormorants in the harbours were chiefly in evidence taking their breakfasts and suppers in the early mornings and evenings, diving close around the ship and also at night when the ship's lights were on. Sometimes it was 'raining' birds as they dived in perpetual streams.

SAMANCO BAY, PERU, 9°S, 5TH–14TH JUNE

Approaching the bay over 100 Chilean Pelicans, 20 Peruvian Boobies, about 200 Guanay Cormorants and over 100 Inca Terns were observed. Subsequently daily counts at the anchorage averaged 30 Pelicans (on one occasion over 100), 20 Peruvian Boobies but only one or two Guanay Cormorants. The commonest bird was the Red-legged Cormorant, up to 250 daily. Up to 30 Grey Gulls, a dozen Southern Black-backed Gulls, a few Simeon Gulls and an occasional South American and Chilean Tern.

CALLAO, PERU, 16TH JUNE

Here 500 Chilean Pelicans, 200 Grey Gulls, 100 Southern Black-backs, 20 Simeon Gulls and 50 Chilean Terns were counted.

MATARANI, PERU, 17°S, 19th JUNE

Ten Humboldt Penguins were seen, great numbers of Chilean Pelicans and Guanay Cormorants, 10 Red-legged Cormorants, 50 Grey Gulls, 50 Southern Black-backs, 150 Simeon, 1 Patagonian Black-headed Gull and 10 Inca Terns. There were no Peruvian Boobies. About 2,000

Chilean Pelicans were estimated to be colonising the islands of Punta Islay. Conditions were similar at ARICA, CHILE, 18½°S, 20TH JUNE.

IQUIQUE, CHILE, 20°S, 21ST JUNE

200 Chilean Pelicans, 50 Guanay Cormorants, 2,000 Grey Gulls, 1,000 Southern Black-backed Gulls and about 20 Inca Terns.

ANTOFAGASTA, CHILE, 23½°S. 22ND JUNE

Conditions very similar to Iquique with the first appearance of Bigua Cormorants but far fewer gulls.

CHANARAL, CHILE, 26°S, 23RD JUNE

Up to 20 Chilean Pelicans, Peruvian Boobies, Guanay and Red-legged Cormorants, and a similar number of Grey, Southern Black-backed and Simeon Gulls, but no Inca Terns.

VALPARAISO, CHILE, 33°S, 26TH JUNE–4TH JULY

Fifteen Humboldt Penguins, 2,000 Chilean Pelicans, up to 500 Peruvian Boobies, 2,000 Guanay Cormorants, very few Red-legged Cormorants and only 2 or 3 Bigua Cormorants, 500 Southern Black-backs, 100 Patagonian Black-headed, 25 Grey and no Simeon Gulls. An occasional South American and Inca Tern.

TALCAHUANO BAY, CHILE, 36½°S, 6TH–16TH JULY

Few Chilean Pelicans, no Peruvian Boobies or Guanay Cormorants, a few immature Red-legged Cormorants and 50 (on one occasion 200) Bigua Cormorants, more than half immatures, 100 Southern Black-backs, under 20 per cent immature and a few Patagonian Black-headed Gulls with wholly or partial black heads.

CHIMBOTE (FERROL BAY), PERU, 9°S, 22ND–23RD JULY

Here very large numbers of Guanay Cormorants (5,000 estimated on one day), 500 Chilean Pelicans, 50 Peruvian Boobies and one or two Red-legged Cormorants were counted. Plenty of Southern Black-backed and Grey Gulls, no Simeon Gulls and a few Inca Terns.

All in all no small birdwatching experience.

G. S. TUCK.

LITTLE GULLS IN SCOTLAND

By Lieutenant Commander J. R. FURSE, R.N.

1. INTRODUCTION

Most reference books state that Little Gulls *Larus minutus* occur annually in Britain as autumn and spring passage migrants and winter visitors—but only in small numbers, and chiefly on the South and East coasts of England.

The Birds of Scotland (Baxter & Rintoul, 1953) stated that Little Gulls were then occurring in Fife with increasing regularity (68 seen on one occasion). There are also scattered records in Angus, including Carnoustie Bay.

My own twenty-five day visits to Buddon Ness, between Carnoustie and Monifieth, on the north side of the entrance to the Firth of Tay,

indicate that Little Gulls occur there regularly on passage, and probably also as winter residents.

This article lists these observations at Buddon Ness and describes the behaviour and recognition characteristics of Little Gulls, based on a total of over twenty hours watching these delightful visitors.

2. BUDDON NESS

Buddon Ness resembles Romney Marsh in shape, but with the East and South shores each only about two miles long. The shore is flat sand all round, with shallow banks off the Ness, and becoming muddy at the West end. Sand dunes, largely covered in marram grass, border the shoreline around the whole perimeter except at the West end: here there are several brackish pools and the little estuary of the Buddon Burn, which largely dries except at high tides. The interior is mostly flat rough grazing, with low berry plants and dwarf willows—wet in parts at most seasons, and with winter flash floods which can persist until May.

The area is effectively sealed from holiday makers by an army exercise area across the base of the triangle, but it is in fact always possible to reach the shore without trespassing.

3. OBSERVATIONS OF LITTLE GULLS AT BUDDON NESS

The list below includes all my visits, whether or not Little Gulls were seen.

Year	*Month*	*Date*	*Number of Little Gulls & Remarks*		
			Total	*Adults*	*Sub-adults*
1951	December	28	None noticed.		
1952	January	14	c20	c15	5
	April	8	c20	c17	c3
	April	15	Adults & immatures present: no record of numbers.		
	April	29	No record of whether Little Gulls were seen or not.		
	August	22	4	1	3
	September	13	None.		
	December	27	No record of whether Little Gulls were seen or not.		
1953	April	9	Adults & immatures present: no record of numbers.		
	August	8	None.		
	August, 27, 28, 29, 30		None.		
	August	31	9	8	1
	September	1	1	1	0
	September	3	1	1	0
	September 4, 5		None.		
	September	6	55	42	13
	September	8	1	1	0
1955	April	15 (approx.)	Adults & immatures present: no record of numbers.		
1965	September	30	2	2	0
1966	April	27	c15	c12	c3
	April	28	12	6	6

4. GENERAL BEHAVIOUR THROUGH THE YEAR

They arrive in late August or early September, usually in small groups, sometimes in larger loosely associated flocks, and often tired. They rest, preen and bathe on the beach, often in company with Terns, Gulls, Kittiwakes (and even Skuas) near the Ness. They feed, again in loose flocks, over the sea off the Ness, and occasionally hawk for insects over the dunes.

They appear to disperse or pass on quite quickly after their arrival. The few remaining individuals are usually seen along the South shore or feeding offshore.

I have only one record noted for three winter visits, when about 20 were feeding in a loose flock offshore from the Ness. They are not very conspicuous, and would be very easy to miss in winter conditions.

On at least six of my seven visits in April a tight flock of Little Gulls was present, usually near the estuary of the Buddon Burn. I have never seen the flock prospecting the inland areas at this time.

5. PROPORTIONS OF ADULTS AND SUB-ADULTS

Adults appear to consistently outnumber sub-adults by about four to one; this difference may be due to differential dispersal from the breeding grounds.

6. FEEDING HABITS AND HABITATS

They normally feed over the sea, most often where the water is shallow or broken. They fly at five to ten feet, dipping down repeatedly to pick things off the surface like Black Terns.

I have seen them picking up food while swimming in tidal pools, but have never seen them feeding on the sand or mud, whereas both Blackheaded and Common Gulls often do so in this area.

In Spring they may also feed over the brackish estuary of the Buddon Burn at low tides.

In autumn on hot afternoons they sometimes hawk for insects among the cloud of Terns and small Gulls over the eastern sand dunes.

7. DISPLAY (See Figs 1 and 2)

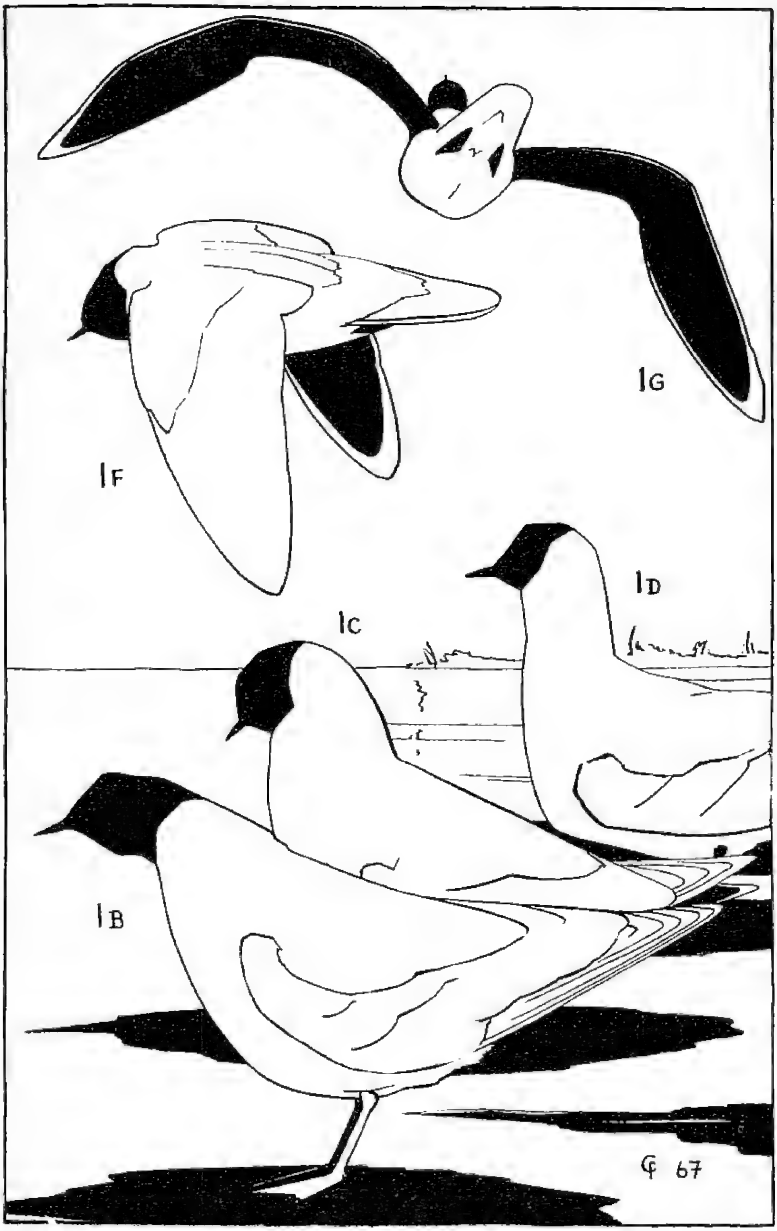
The flock in April is restless, spending much of the time resting and preening on the sand or in shallow water on the estuary of the Buddon Burn, but frequently rising in groups or all together to fly round in a bunch calling, with some birds displaying in flight.

Birds in immature plumage take part in display, in fact they are sometimes the most active participants.

The primary display on the ground is a tern-like posturing. The neck is first thickened up (2A) and then is fully extended with the head and bill inclined upward in a straight line (1B and 2B). At the same time the carpal joints are usually lowered, and the tail and folded primaries inclined upward giving a tern-like tapering outline.

This is often followed by the head and bill being turned downward with the neck drawn back and appearing very thick (1C). This last posture and variations of it may be assumed without being preceded by the extended position, particularly when swimming.

A distinct variation of this posture, with the neck extended vertically upward, the bill pointed straight forward, and the feathers of the crown depressed (1D) appears to act as a warning to another bird to keep its distance. This posture resembles a posture of Blackheaded Gulls, which fulfills a similar function.



ADULT PLUMAGE

Illustrations by Lt. Cdr. J. R. Furse, R.N.

Display on the ground is usually accompanied by calling "kek-kek-kek" from among the flock. This calling often builds up to a climax, at which a group, or the whole flock, will take off on a display flight.

On these display flight excursions the group flies in a tight bunch compared to the normal loose association of individuals. They call repeatedly the same "kek-kek-kek," and fly an erratic course (2E) but with rather stronger and more defined wingbeats than usual. Several birds may fly with the head drawn in giving a bull necked appearance (1F).

The most noticeable display flight posture is with the head thrown upward so that the bill points almost vertically upward (1G and 2G). The tail is kept up and the wings are held rather forward and downward, the feet are sometimes dropped slightly. This posture is seldom held for more than a few yards of flight, but may be repeated several times at short intervals.

8. VOICE

They are normally comparatively quiet except during display in spring. The short, rather low pitched "kek-kek" call is however used occasionally throughout the year. A single "tchape" (like a rather delicate Snipe's call) is used occasionally when disturbed.

9. GENERAL FIELD RECOGNITION CHARACTERS

The small size is not a very reliable field character on the wing, even when in company with other small gulls. However on the ground the Little Gull's very short, tern-like legs immediately distinguish it from all other small Gulls; when standing it is closely comparable in size with a Common/Arctic Tern.

The wavering hesitant-erratic flight when feeding resembles a Black Tern's and is characteristic. However on some occasions when not feeding the Little Gull's flight may be quite strong and direct.

The adult and sub-adult plumages are very different. The adults (Fig 1) are most easily confused with Blackheaded Gulls. The sub-adults (Fig 2) are most easily confused with Kittiwakes in tarrock plumage.

The untidy dark markings about the head are a useful recognition feature in all plumages other than the (easily recognised) full breeding plumage.

Little Gulls otherwise appear very neat and compact in all plumages. Wings, tail and head all seem to be rounded and less angular than in other small Gulls. The wings also appear comparatively broader and shorter from the carpal joint to the tip, than in other small Gulls.

The head and tail appear to project less beyond the wings than in other Gulls. These features all help identification, but are only diagnostic when familiar with the species.

10. SOFT PARTS

In the field both legs and bill appear blackish in all plumages. I have not seen the red of the bill even in full breeding plumage.

The bill is short and fine compared to other small Gulls. This is accentuated by the head being rounded rather than tapering into the bill as in the Blackheaded Gull.

The eye is dark. When in full breeding plumage there is no noticeable white orbital ring as in the Blackheaded Gull.

11. JUVENILE PLUMAGE (Fig 2E)

On arrival in autumn the typical sub-adult wing markings are well defined, but the covert feathers are centred dark brown with varying widths of pale edging and so the forward triangle of the inner wing is filled in with darker marking than is the case later. When at rest these coverts form a beautiful brown mantle with pale mackerel markings. The underwing is white.

The marking of the head and neck is variable: they are basically white with dark brown markings on the crown, through or near the eye, down the back of the neck and sometimes on the side of the neck. The generally darker more untidy marking of the head of the juvenile Little Gull helps to distinguish them from tarrock Kittiwakes.

The wings of the sub-adults appear more pointed than those of adult Little Gulls, but the mode of flight and general shape should still distinguish them from tarrock Kittiwakes.

12. FIRST SPRING PLUMAGE (Figs 2A, 2B and 2G)

By the first spring the juvenile plumage has altered slightly, though the general wing pattern in flight is similar.

The marking on top of the wings is more sharply defined in flight because the barred brown coverts have become an even matt grey with a faint brownish tinge. On the ground the mackerel pattern of the juvenile is replaced by a plain grey back, with a dark brown-black horizontal bar from the carpal joint to the tip of the primaries. Sometimes, with the feathers ruffled, this dark bar is split in two by the white of the secondaries and inner primaries.

The marking of the head and neck is now very similar to the adult winter plumage with a rather indefinite broken grey or dark grey cap and (usually darker) mark behind the eye.

Sometimes some additional dark marking about the head is evident in April, but I have never seen the dark on the head predominating as in the illustration in the Handbook of British Birds. The patchiness of this marking is a useful recognition feature in comparison to tarrock Kittiwakes.

I have never noticed the tail pattern where the dark terminal bar is interrupted in the centre, and therefore feel that this is unlikely to be a very helpful feature for recognition. Nor is the shape of the tail (rounded) a very marked distinguishing character compared to tarrock Kittiwakes.

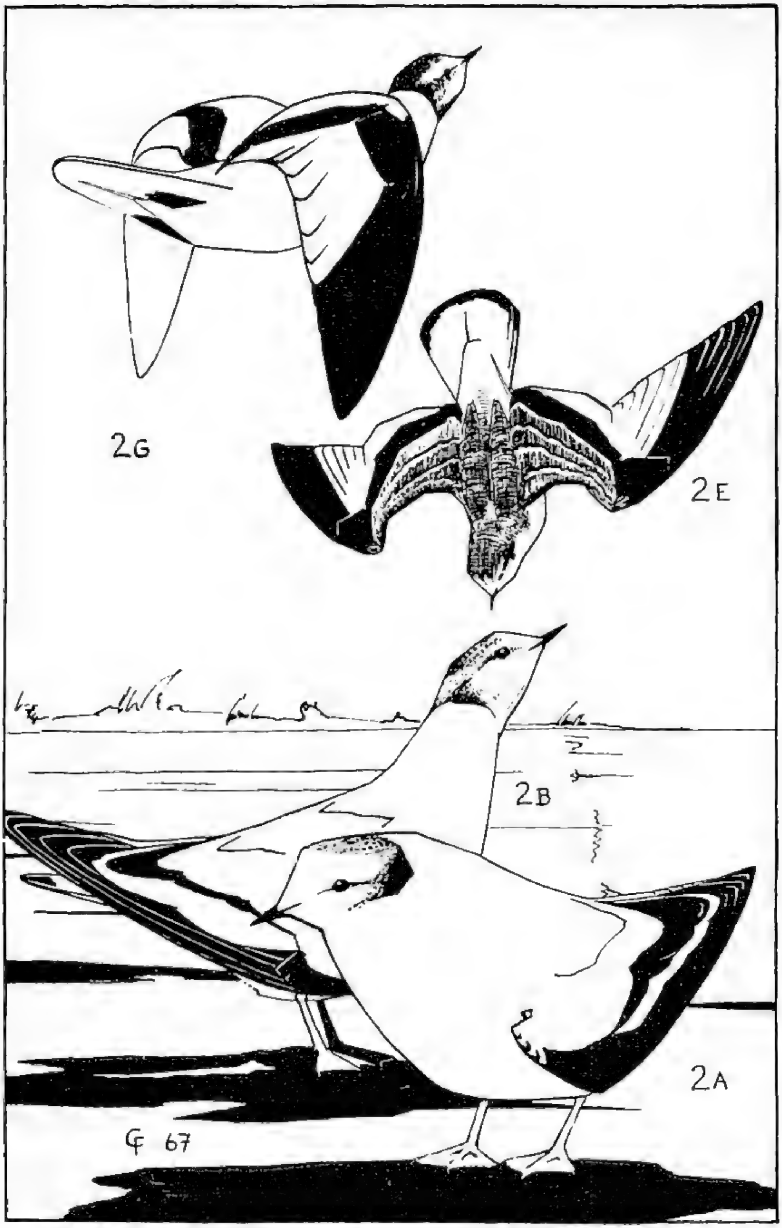
13. SECOND AUTUMN PLUMAGE

Five birds seen on 7th September, 1963, had pale grey to white underwings but were otherwise exactly as other adult birds. I have no other record of seeing this last stage of sub-adult plumage. In this plumage the absence of black on the wingtips, and the patchy head markings would be the only definitive features in flight. The short legs would still be immediately diagnostic on the ground.

14. SECOND (AND SUBSEQUENT) WINTER PLUMAGE

The wings of the adult appear very rounded compared with all other small gulls, and even with sub-adult Little Gulls.

The tops of the wings and the back are a uniform pale gey with a neat white border. The grey is similar in tone to Blackheaded Gulls or



SUB-ADULT PLUMAGE

Common Terns, being paler than in the Kittiwake: it does not contrast very sharply with the white nape and tail. The absence of any black on top of the wing is quite distinctive when looked for.

The underwing is a dark slaty grey which appears almost black in most lights and is quite distinctive. This is again neatly bordered by white. With their erratic flight the black underwing may only be glimpsed at intervals, but when landing the wings are always held momentarily aloft.

The rounded head has a grey patch on top in addition to the mark behind the eye. This gives a general impression of patchiness which is quite a useful recognition feature in comparison to Blackheaded Gulls.

On the ground the outline is rounded, the neck always appearing short except during display. The wings and tail do not have so long and tapering an outline as other small gulls. Sometimes they stand very erect when their stance is more like the terns than the small gulls. The combination of short legs and short bills immediately distinguishes them from any tern or other small gull when on the ground.

Adults swimming are not easy to see in rippled water, but when seen are easily distinguishable from all other gulls. The neck is always short and rounded. The top of the back is usually almost horizontal. The tip of the wings appear very rounded, as the grey of the scapulars and secondaries appears to form the wing tip (which is actually white and extending beyond them). These give a very simple, neat and compact shape.

15. SECOND (AND SUBSEQUENT) SPRING PLUMAGE (All in Fig 1)

By the end of April only about a quarter of the adults have achieved the complete black head, and some may still be virtually in winter plumage. The black encroaches on the white from the back, the area round the beak being the last to change. Throughout April a large variety of untidy head patterns may be seen together in one flock.

The complete black head is very smart, it is unrelieved by any white around the eye and the bill appears equally black. I find the blackness of the head a much more noticeable distinguishing feature than its extent, when compared to Blackheaded Gulls.

In some lights, birds in full breeding plumage have a distinct rosy flush to the breast.

16. THIRD (AND SUBSEQUENT) AUTUMN PLUMAGE

I have not seen a complete black head after the end of August. However most birds still have a lot of black about the head at this time. By the end of September some birds have reached winter plumage, but some may still have more black than white. As in spring the change occurs gradually (in the reverse direction) and produces a variety of untidy mottled appearances.

17. COMMENT

This population of Little Gulls at Buddon Ness may now be well known and comprehensively reported. However they are delightful birds quite apart from their comparative rarity elsewhere in Britain; visits by members of the R.N.B.W.S. stationed at Condor would be rewarding.

If Little Gulls were ever to nest in Britain, E. Scotland would appear to be a likely place for the first colony, since the habitat corresponds reasonably with their breeding requirements.

It would be interesting to know from which breeding grounds the birds at Buddon Ness originate. Denmark and Sweden seem most likely, but they are not commonly seen along the south coast of Norway which would be on the direct migration route. Any observations in the North Sea in late August/early September, or in late April/early May, would be of interest.

It would also be interesting to know the proportion of the Little Gulls at Buddon Ness that are passage migrants along the east coast of Britain. Again observations in the North Sea might provide further information, as would more winter observations in the Buddon Ness area.

BIRD MIGRATION ACROSS THE MEDITERRANEAN OBSERVED BY RADAR

Summary of Lieutenant Commander M. B. Casement's Paper published in *Ibis* 108 (1966): 461–491

Lieutenant Commander Casement has carried out pioneer work at sea in classifying hitherto unexplained echoes on air warning radar screens in the Naval Service showing that these can be due to the passage of birds on migration. In his lengthy paper he describes in great detail work carried out in 1961, 1962 and 1963, illustrated with photographs of radar echoes, maps and calculations. It is hoped that the summary which follows will encourage others to appreciate the character of certain of these bird echoes and possibly to evaluate results from them.

Many a time on an air warning radar attention has been drawn to echoes, more frequently at night, which have disappeared in the radar 'ground wave' close to the ship only to reappear and be tracked again when nothing has been seen visually. Plotters have come to dub these just 'weirdies'!

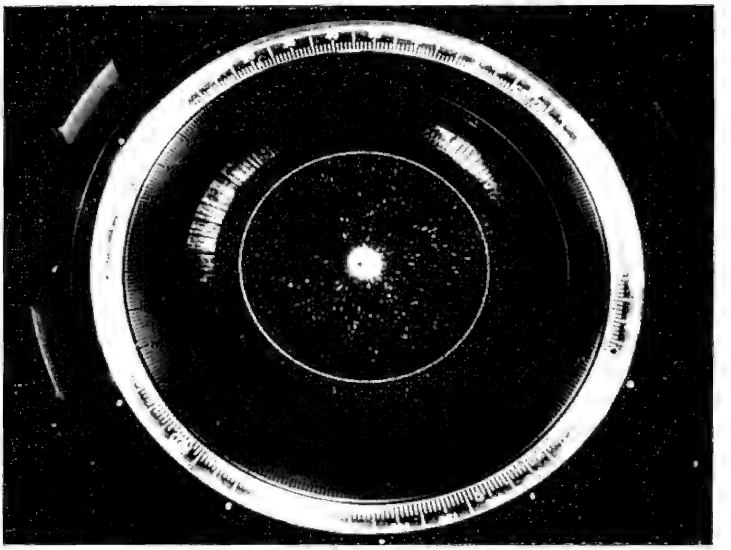
In the Mediterranean, particularly in spring and autumn, large echoes can be seen; sometimes, however, the screen shows dense masses of small echoes described as 'sea returns' which the author has verified as echoes from bird flocks.

TYPES OF ECHOES

Surface ship echoes show up as heavy straight lines, and fast moving aircraft as a series of disjointed points across the display. Bird echoes appear as very fine parallel lines, the direction giving relative track.

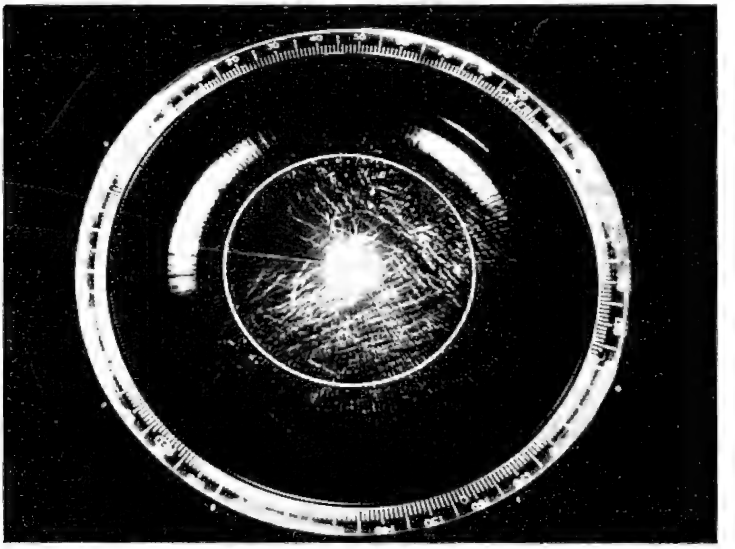
1. Large and Fast (by night). Easily detected by naked eye when a succession of ranges and bearings can be plotted manually to obtain true track and speed. Their speed is usually between 30 and 50 knots and in the Mediterranean attributed mainly to ducks, waders and Turtle Doves. This type of echo almost always occurs at night.
2. Large and Slow (by day). When analysed photographically their speed is usually between 20 and 25 knots and believed to be caused by single large raptors, groups of Herons or other large birds.

EXAMPLE OF BIRD FLY PATH ECHOES



ABOVE (a) Instantaneous exposure.

BELOW (b) 6mins. exposure showing movement of large echoes tracking N.E. and smaller echoes tracking S.E.



3. Small. These comprise by far the most bird echoes and occur by night in vast numbers, sometimes swamping the radar display out to 15 miles. A check on heightfinder can quickly disprove 'sea returns,' but only photographic analysis can show that the echoes are moving on a course and speed unrelated to the wind. These small echoes are 'night migrants,' probably small passerines leaving the coastline about 45 minutes after sunset, usually at 20–30 knots.

ANALYSIS

At sea as the radar is mounted in a moving ship, analysis is complicated as an echo observed directly from the radar moves relative to the ship, and before being able to decide whether the echo is stationary or moving it must be plotted and resolved for ship's course and speed. Knowing the scale and ship's true course and speed and the course and speed of the echo relative to the ship the true course and speed of the echo track can be obtained by a velocity triangle. For large echoes this can be done direct on a plotting table. Normally however the author had to rely on a photographic technique by mounting a camera to face the radar display and exposing the film at the moment the echoes appear by a short exposure of two aerial rotations, giving an instantaneous record. A second exposure of 6 minutes is then given which shows the drawn out lines over this period. The two photos can then be compared to assess the type of echo. To find the true height a heightfinder is necessary, but it was found in practice that most echoes in the Mediterranean occurred between 4,000 and 6,000 feet, a valuable guide if no heightfinder was available.

DENSITY

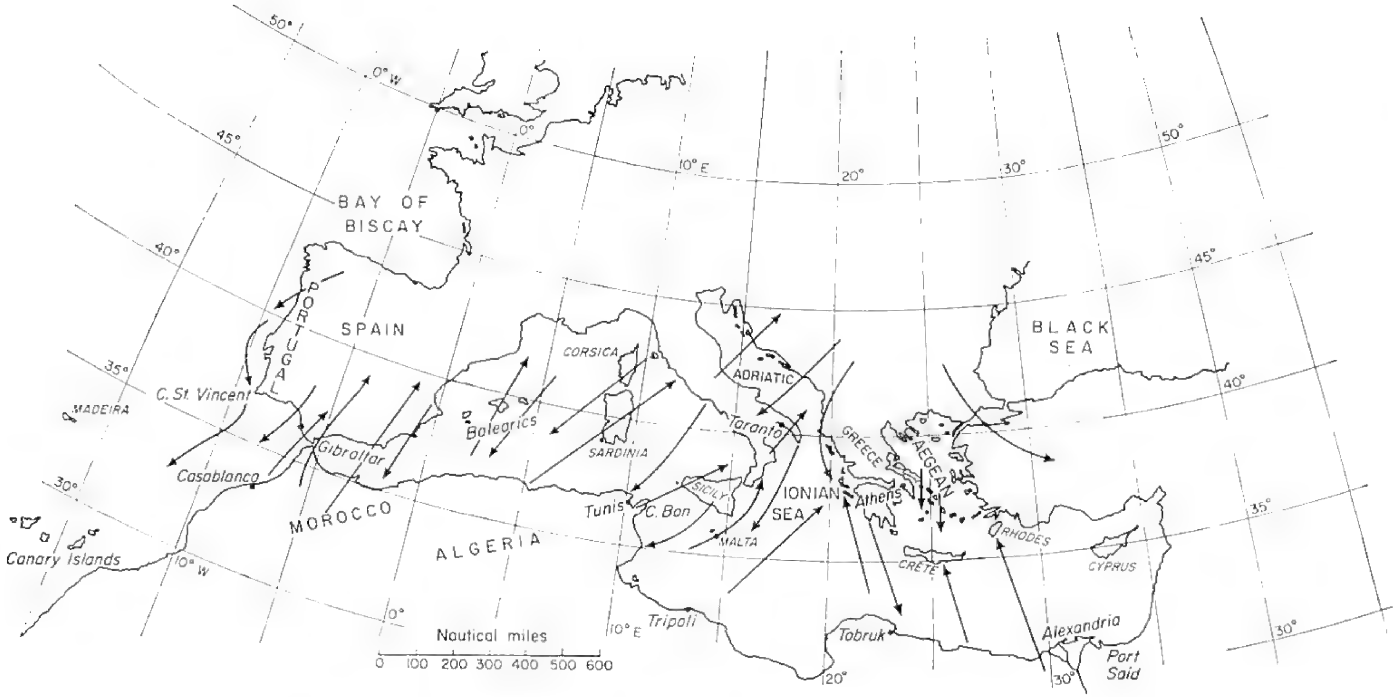
To estimate the density of birds a series of density scales was determined from experience of a large number of similar echoes within a radius of 10 miles as follows: —Scale 1 = less than 20 birds, 2 = 20–50 birds, 3 = 50–100 birds, 4 = ⅓ area covered, up to 6 = very dense whole area covered. 'Large and Fast echoes,' scale 2, i.e. 20–50 birds, could often be determined without resort to photographic analysis.

CONCLUSIONS

In his full report the Author included large scale maps of separate sections of the Mediterranean from the Straits of Gibraltar in the west to the Aegean Sea in the east showing the direction of observed radar flypaths and scale density on different dates and years.

He concludes that in spite of the limitations of the technique he employed he believes that the pattern of migration is generally as shown on the map accompanying this summary.

There is overwhelming evidence to support the broad front theory. Throughout the whole of the western Mediterranean the direction is not merely North/South but Northeast/Southwest; whereas in the eastern Mediterranean it is North Northwest/South Southeast. In the central Mediterranean there is an apparent hiatus, especially in the Ionian Sea in the autumn. The scale of migration across the whole area seems to be very much as predicted by Moreau (1953) and Lack (1961), but the migration period extends over a longer period than generally accepted. It was well under way in the autumn by 18th



Summary of the directions of migration over the whole Mediterranean.

August and still strong on 24th October; in the spring it continued at least as late as 13th May.

Radar shows that ordinary visual observation alone gives a highly misleading picture. The main volume crosses unseen by night at about 3,000–5,000 feet; only when birds are exhausted by contrary winds are they forced low and reported by ships. Close offshore from departure point the intensity at night is very great, becoming less further from land presumably owing to varying speeds of species.

REMARKS ON USE OF SHIP-BORNE RADAR

These radars can provide useful data on bird migration over the sea, and it is hoped that others will be induced to further the investigations. The technique however is extremely laborious and time consuming, but there are many sea areas in the world where nothing is known at all about the scale and direction of bird migration, and any indications of bird echoes on radar screens—even without complete deductions of course, speed or density will be valuable. Lieutenant Commander M. B. Casement, R.N., would be glad to receive details and give advice to anyone interested. He should be addressed c/o our Hon. Secretary's address.

ACKNOWLEDGMENT

R.N.B.W.S. gratefully acknowledges the permission of the Editor of *Ibis* to publish this summary from *Ibis* 108 (1966): 461–491.

G. S. T.

(*Comment*: This paper is a remarkable achievement. It required considerable initiative and ingenuity to devise a photographic method of recording tracks for analysis with a moving radar, and the analysis itself must have required great labour. Certain points may be made about the results. They are of course very fragmentary, since they depended on the movements of the vessel, which precludes much study of such issues as the differences between different types of movement, or the relation between these and the weathr. It sems likely that thy suffered to an unusually high degree to the deficiencies of all radar work, including a tendency to show up certain comparatively conspicuous or high movements at the expense of the less conspicuous and lower ones, especially concentrated low-level movements around mountain and water barriers. A good many scattered movements of smaller birds may have been overlooked altogether. But the work does confirm for the Mediterranean area as elsewhere that much movement occurs on a broad front; also, I would have thought, that as I have argued elsewhere (Bird Banding 34:162) that there is a tendency for the main streams to move around the opposite extremities of the Mediterranean, avoiding at least the central crossing of the Ionian Sea and the desert to the south, probably more because the birds find few places to rest in this region than because of any intrinsic difficulty in the crossing.

Those who wish to know more about radar will now find a useful summary of the physical principles involved, the character of different types of apparatus, and the better-known work on bird movements in the book "Radar Ornithology" by the Chief Scientist to the Marconi Company, Eric Eastwood (Methuen, London, 1967, price 75/-). The

technical details in this work will surely be useful to those who wish to go into the subject deeply, though it seems rather regrettable that the author does not seem to have got ornithologists to check their side of his account; for example, on page 67 echoes around the Bass Rock are attributed to "gulls," and much of the rest of the ornithological discussion is in keeping with this. From our point of view there is no comment on the appearances caused by flocks of feeding seabirds on marine radars that give rise to false reports of land on the one hand and enable fishermen to trace shoals of fish o nthe other, nor is there any note of the work on gull movements by Dr. M. T. Myres and myself (Bird Study 10: 34–43, Scottish Birds 2: 1–15), although it also has important practical applications for the avoidance of bird-strike hazards by aircraft, as was brought out at the recent Institute of Biology symposium on "Birds as Pests," whose proceedings are expected shortly. Indeed, the book, like most work on radar, suffers from the important criticisms that there seems to have been little consideration of its practical application in such fields at all.—W. R. P. Bourne.)

SHORT NOTES

OBSERVATIONS ON JAPANESE SEABIRDS

Contributed by R. A. Cheke

INTRODUCTION

Most of the following observations were made on a voyage from Nakhodka to Yokohama (onboard M.S. *Khabarovsk*) from noon on 15th July until the late afternoon of 17th July, 1966. However visits were also made to Kozu Island, one of the seven islands of Izu in the Pacific near Tokyo, and to Hide and Sangan Islands in Iwate Prefecture of Northeast Honshu. Kozu Island was visited on 24th August, Hide Island on 21st August and Sangan Island on 25th August.

It is hoped that the observations made will contribute something to the knowledge of seabirds in this area. Unfortunately a thick mist prevented more detailed observations in the northern Sea of Japan.

DETAILS OF SPECIES OBSERVED

WHITE-FACED SHEARWATER *Calonectris leucomelas*.

Abundant on the east coast of Japan throughout the breeding season. On 16th July, 1966, 139 were seen while passing through and around Tsugaru Strait, and 230 on 17th July off Cape Nojinia, 35°N, 140°E.

On 25th August I visited Sangan Island, near Kamaishi in Iwate Prefecture, a breeding ground of large numbers of White-faced Shearwaters, which were nesting in holes on all parts of the island which I examined. The nests were at the end of burrows which were usually about 2 feet in length. The weak soil involved great care when walking near the nests so as not to fall through the roofs of their tunnels. Apart from a few bamboo plants there was no vegetation near the burrows as the activities of the birds had made the area bare. The area was however shaded by large trees.

Sixty per cent of the nests explored were empty, 30 per cent contained young ranging from newly hatched to one month old chicks,

the remainder occupied by adults on eggs or brooding birds. As the perimeter of the island consisted of a 50-foot wall of rock all the nests were above this level.

Thirty-one birds were ringed, seven adults and twenty-four nestlings, using rings issued by the Migratory Animal Pathological Survey (M.A.P.S.) inscribed PO Box 3443, Hong Kong.

PALE-FOOTED SHEARWATER *Puffinus carneipes.*

Two individuals came close to the ship on 16th July during a one hour watch off the northeast coast of Honshu, between 40°4′N, 141°9′E and 40°1′N, 142°E. The birds flew past slowly with few wing beats between each glide, clearly showing their pale bills, dark brown upper surfaces, darker wings and rounded tails.

SHORT-TAILED SHEARWATER *Puffinus tenuirostris.*

A total of 61 were recorded from both ends of Tsugaru Strait on 16th July, revealing a clear underside of their wings with dark linings, pale tips to primaries on the upper side and rounded tails. There are few records of this species near Japan other than those from May to Mid June. Kuroda (1955) recorded a "conservative estimate" of 2,020 during a voyage in the summer of 1964, most of the birds being north of Hokkaido.

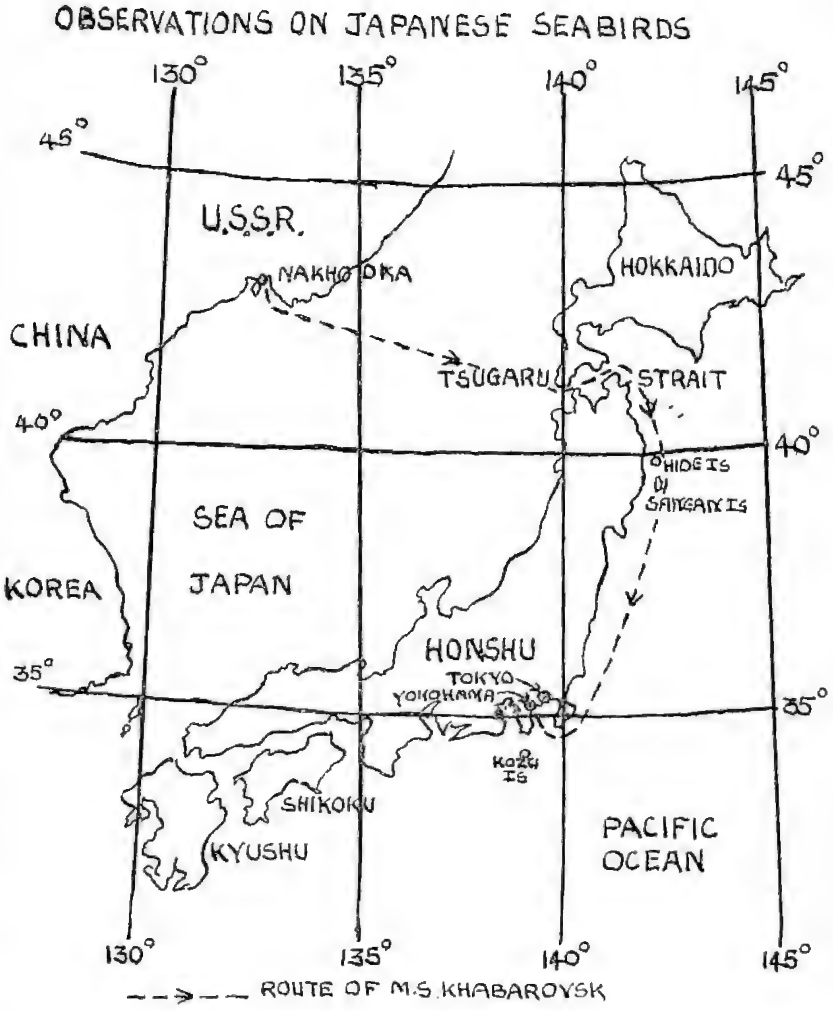
MADEIRAN STORM-PETREL *Oceanodroma castro.*

Sixteen were seen off the coast of Iwate Prefecture on 16th July, presumably birds from the breeding colony on Hide Island.

Austin (1952) describes this bird as "a small white-rumped species, distinct from other similarly coloured and dimensional species only in the shallower forking of the tail and in having the white rump feathers broadly tipped with black. Neither of these features can be discerned unless the bird is in the hand." However the white rump is broader than in Leach's Storm-Petrel *O. leucorhoa* and it stretches to the underside of the bird. This character together with the fact that the bill is deeper and stockier is useful for identification if birds are seen close to. I also agree with Kuroda (1955) that the wings of *O. castro* are shorter than those of *O. leucorhoa* which makes it look noticeably smaller. *O. castro* also flaps its shorter wings faster and less rhythmically than *O. leucorhoa.*

On 21st August I visited Hide Island where up to 25,000 pairs of Madeiran Storm-Petrels breed *(Uchida, per Yoshii, pers. comm.).* Hide Island, like Sangan Island, is of volcanic rock covered with vegetation from 30 feet from the sea. Each nest of *O. castro* has two burrows each about 1ft. 6in. long. These were often twisted, hence some of the nests were impossible to reach. In addition the thick vegetation impeded movement on the island and made it difficult to find the nesting holes.

Approximately 50 per cent of burrows examined were empty, 25 per cent contained adults on eggs or small young, and the remainder were occupied by nestlings of between 1 week and 3 weeks old. No young close to fledging were found. There was considerable evidence of predation; one freshly killed bird was obtained and has been deposited in the British Museum (Natural History).


OBSERVATIONS ON JAPANESE SEABIRDS
130°
135°
140°
145°
46°
45°
40°
35°
U.S.S.R.
NAKHODKA
HOKKAIDO
CHINA
TSUGARU
STRAIT
HIDE Is
SAITCAN Is
SEA OF
JAPAN
KOREA
HONSHU
TOKYO
YOKOHAMA
KOZU Is
SHIKOKU
KYUSHU
PACIFIC
OCEAN
ROUTE OF M.S. KHABAROVSK

SWINHOE'S STORM-PETREL *Oceanodroma monorhis.*

A small dark storm-petrel, probably of this species, was seen amongst the Madeiran Storm-Petrels off the coast of N.E. Japan on 16th July.

FORK-TAILED STORM-PETREL *Oceanodroma furcata.*

One flew very close to the ship at 40°2'N, 142°E on 16th July. The fast wing-beats and overall grey colouring were very distinctive. Rump and tail were uniform grey and the paler head and wing bars conspicuous.

This species breeds from the central Kurile Islands north to the Bering Sea and on the N.W. coast of North America (Austin and Kuroda 1953). There are a few scattered records from coasts of central Japan, but Kuroda did not record any south of 44°16'N in June, 1964.

UNIDENTIFIED STORM-PETREL AND CORMORANT *Oceanodroma* and *Phalacrocorax Spp.*

Four small black storm-petrels were seen about 41°N, 141°E on 16th July, and 2 more next day at 35°6'N, 141°8'E.

GREY PHALAROPE *Phalaropus fulicarius.*

A flock of eleven, mostly in winter plumage, was seen on the water between Shimoda and Kozu Island on 24th August.

RED-NECKED PHALAROPE *Phalaropus lobatus.*

A total of 47 were disturbed by the ship in Tsugaru Strait on 16th July. All were in summer plumage and did not take flight until the ship was right upon them.

SLATY-BACKED GULL *Larus schistisagus.*

Five crossed Tsugaru Strait from Hokkaido to Honshu on 16th July.

GREAT BLACK-HEADED GULL *Larus icthyaetus.*

Common in Nakhodka harbour.

SPECTACLED GUILLEMOT *Cepphus carbo.*

Six seen at east end of Tsugaru Strait on 16th July.

MARBLED MURRELET *Brachyramphus marmoratus.*

One was seen close to the ship at 42°4'N, 134°E on 15th July. This species has not been shown to breed south of Kamchatka, but is suspected to do so in the Akkeshi district of Hokkaido (Austin and Kuroda, 1953).

ANCIENT MURRELET *Synthliboramphus antiquus.*

These nest in South Korea and the southern Kurile Islands but have not been proved to nest in Japan (Austin and Kuroda, 1953).

I saw 2 in Tsugaru Strait on 16th July and 3 between Miyako and Taro on 23rd August. The white stripe behind the eye, pale bill and black throat were clearly visible on 3 of the birds.

The trip to Sangan Island was only made possible by the assistance of members of the Japanese Maritime Safety Agency in Kamaishi, for which I am very grateful.

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NOTES ON SEABIRDS ON VATU IRA I. FIJI.— SEPTEMBER, 1966

Contributed by LIEUT. J. F. SHORTHOUSE, R.N., H.M.S. *Dampier*

Vatu Ira is a small island, completely isolated, some three hundred yards long and one hundred yards wide, situated at the southern end of the Bligh Waters in the Fiji group. It is shaped like a dumbell with a small hillock to the north and a sandy strip connecting the larger hillock, some two hundred feet high, to the south.

We landed on the western side of this sandy strip across the coral reef. Each hillock was covered with bushes, and each bush was packed with birds' nests.

The most easily identifiable birds were the Great Frigate-birds circling overhead. There were 3 types of booby, the Brown Booby *Sula leucogaster*, Blue-faced Booby *Sula dactylatra* and the Red-footed Booby *Sula sula*. On the beach as we landed there were Roseaeo Terns *Sterna dougalli* flying around, and we had disturbed a colony of these birds on a place called Four Foot Rock on the other side of the Vatu Ira Channel.

Two species of Noddy were present, the Common Noddy *Anous stolidus*, and the White-capped Noddy *Anous minutus*.

[NOTE BY EDITOR : Lieut. Shorthouse, who was surveying the island was only present during one afternoon and unable to give time to a detailed study of the breeding situation, but it appeared that all species were, in fact, breeding at the time.]

A QUESTION OF IDENTITY

The variable plumage of some seabirds greatly increases the difficulty of identification when the body itself cannot be compared with others. The R.N.B.W.S. standard examination form when properly completed and backed up with good photographs of all aspects of the live bird will in most cases provide the answer, since while we do not recommend that dead bodies be thrown away, it is never R.N.B.W.S. policy to kill birds merely for identification.

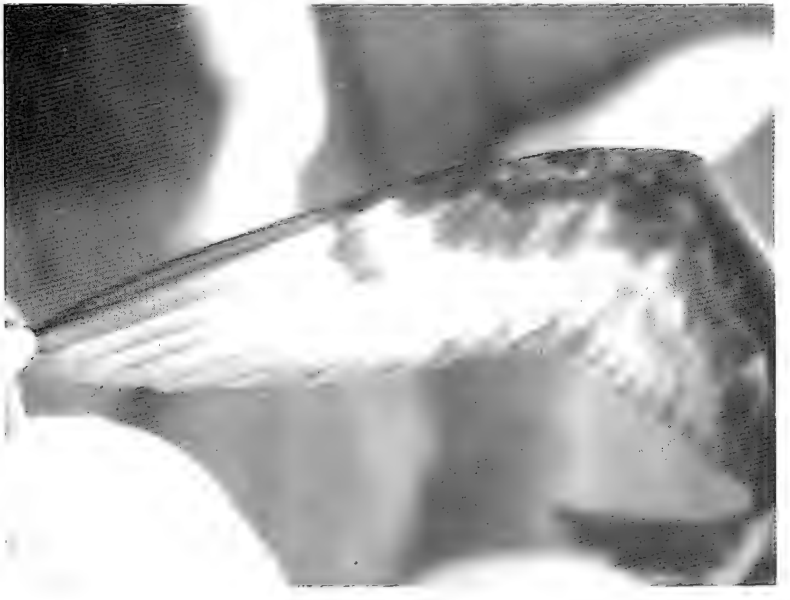
A 'hot one' which has recently been causing debate around the world provides an excellent illustration of what can be done with a good examination form and photographs. An account of the way its identity was run to earth, together with an illustration of the little known characters used, may be of interest.

The bird, a petrel, came aboard Chief Officer John Jenkins' ship, s.s. *Mantua*, in port off Nukualufa in the Tonga Islands on 16th June, 1966. Jenkins filled in a full examination form which we reproduce in part together with two of his three photographs, and hopefully passed these around experts of the world for identification.

The first suggestion was that it was the Chatham Petrel *Pterodroma hypoleuca axillaris*, on account of its comparatively soft, dove-like markings. This conclusion might have passed if only the back had been photographed, but was disproved by Dr. R. A. Falla in New Zealand.

TRINIDADE OR HERALD PETREL *Pterodroma arminjoniana heraldica.*
PALE PHASE.

Note finely barred forehead and side of breast merging with pale face and breast, flecked under tail coverts and foot markings.



UNDERWING.

Note dark shafts but pale inner webs of primaries, and mottled underwing—rather variable. (Kermadec Petrel Pterodroma neglecta *is very similar but has more wedge-shaped primaries with white shafts, and a better defined white patch on inner webs.)*

who showed that there was far too much marking on the underwing. He suggested that it might be some other small gadfly-petrel of the *Hypoleuca* group, or the Herald or Trinidade Petrel *Pterodroma arminjoniana heraldica*, already known to occur in the Tonga area. The ball was then passed to Dr. W. R. P. Bourne, who had measurements of two specimens of the Herald Petrel taken on Hingatonga in the Tonga group by the Whitney Expedition on 24th July, 1925, now in the American Museum of Natural History, and which compared with the bird in question as follows: —

	Wing	*Tail*	*Bill*	*Tarsus*	*Toe*
Hingatonga, male	278	112	27	35	45
Hingatonga, female	285	108	27	35	45
Nukualufa (Jenkins)	263	107	27	32	45

Measurements in mm.

Its overall length was 352m.m., overall wing span 885m.m.; the measurements are far too big for any petrel of the "hypoleuca" group, and the photographs matched well with those of another Herald Petrel photographed by John Warham on Raine Island off eastern Australia on 22nd November, 1959 (Emu 59 : 153–158) and the type specimens of the species in the British Museum (Natural History) taken by H.M.S. *Herald* on the Chesterfield Island in the Tasman Sea nearby. They illustrate excellently the markings of the extreme pale phase of this polymorphic species, which may also be more heavily mottled below or entirely dark. The slightly short wing measurements and the fact that the bird came onboard suggests that it may have been a young individual with its primaries still growing which had just fledged.

EXTRACTS FROM ORIGINAL R.N.B.W.S. EXAMINATION FORM

DESCRIPTION

Upper parts
- Forehead: mottled grey
- Side of head: mottled grey
- Crown: grey
- Nape: grey
- Back: grey/black
- Rump: grey/black

Underparts
- Chin: white
- Throat: mottled
- Breast: white
- Belly: white
- Flanks: grey
- Under Tail: ends of feathers grey, otherwise white

Wings above
- Primaries: black leading edge
- Secondaries: black
- Upper wing-coverts: black

Wings below
- Under wing-coverts: dark grey
- Under wing edges: light patch at elbow.
- Axillaries: black

Tail
- Shape: round
- Colour: black tips, white at ½ length
- No. of feathers: 12

Bill
- All black, upper and lower mandibles as in *Nigripennis*
- Interior: pink

Legs and Feet
- Colour and marking: flesh coloured down legs and ½ of feet, outside of feet black up to ankle.

MEASUREMENTS (mm.)

Greatest overall length (from tip of bill to tip of tail with bird extended on flat surface)	352
Greatest overall wing-span (length between tips of spread wings measured across back)	885
Wing (length from wing angle, outermost carpal joint, to tip of longest primary with wing closed and flattened against a ruler)	263
Tail (length from base of central feathers to tip of longest tail feather)	107
Bill (culmen. chord from margin of feathers above to tip of bill)	27
Tarsus (length of lowest leg bone, from notch behind last joint to front of knuckle at base of toes)	32

Number of tail feathers 12. Gaps, nil.
Number of wing feathers 10. Gaps, nil.

OBSERVATIONS BY PERSONNEL OF R.V. *ATLANTIS II* ON ISLANDS IN THE INDIAN OCEAN

By ROGER POCKLINGTON

The summary of observations of the more remote islands in the Indian Ocean by personnel from H.M.S. *Owen* and H.M.S. *Dampier* in *Sea Swallow* 18:40–43 has stimulated me to check additional notes made in the area during two cruises of the Woods Hole Oceanographic Institution vessel R.V. *Atlantis II* in August–November 1963 and March–August 1965. Although there was no full-time ornithologist on board like Roger Bailey in R.R.S. *Discovery* when she worked this area (*Sea Swallow* 17:52–56), a regular bird-log was maintained by the Third Officer, Mr. M. Palmieri, and myself, assisted by Dr. R. Riseborough in 1963 and Mr. P. R. Willis in 1965. Our combined notes on Coco Island, Cargados Carajos Shoals, have already been published in the *Ibis* 107:387.

THE LACCADIVES

We passed close to the southernmost island (Suheli Par?, 10°N 72°E) on 5 September, 1963, and saw Sooty Terns *Sterna fuscata*, Crested Terns *Thalasseus bergii*, Common Noddies *Anous stolidus* and dark gadfly petrels (probably Jouanin's Petrel *Bulweria fallax*, of whose existence we were unaware at the time). In 1965 we made two north-south traverses through the group, and on 15 March saw more than 35 dark storm-petrels, probably Swinhoe's Storm-petrel *Oceanodroma (leucorhoa) monorhis* at 10°53′N, 72°45′E, and on 5 April a jaeger or skua, probably the Pomarine Jaeger *Stercorarius pomarinus*, harrying more Sooty and Crested Terns.

CHAGOS ARCHIPELAGO

Entering the lagoon of Diego Garcia through Main Pass at first light on 19 May, 1965, we saw many Crested Terns, some noddies in the distance (a small flock flying over the plantation later in the day were Lesser Noddies *Anous tenuirostris*) and some Fairy (White) Terns *Gygis alba*. Eight large, long-billed waders which flew by the ship

appeared to be species of *Numenius*, and not Eastern Curlew *N. madagascariensis* as the underwing was streaked; both Whimbrel and Common Curlew *N. phaeopus* and *N. arquata* have been recorded in the past. Cattle Egrets *Bubulcus ibis* and Fairy Terns were nesting in the trees behind the Resident's house, and Indian Mynahs *Acridotheres tristis* were much in evidence about the buildings at East Point. M. Gitane Gendron, the Acting Resident, then kindly drove me through the coconut plantations to the north-east tip of the main island, and here I saw more Cattle Egrets and Mynahs, fair quantities of Little Green Herons *Butorides striatus*, Madagascar Turtle Doves *Streptopelia picturata* and Madagascar Fodies *Foudia madagascariensis*, and one Barred Ground-dove *Geopelia striata;* the latter is probably much reduced in numbers, as Loustau Lalanne counted 14 near the Settlement at Pointe Est in December, 1960 (*Ibis* 104:67–73). We saw one Black-naped Tern *Sterna sumatrana* as we were leaving the lagoon. The residents recognised pictures of the Red-tailed Tropic-bird *Phaethon rubricauda* and the Crab Plover *Dromas ardeola* and said they were reasonably common, the first occurring in the north-west and the second in the south, but they did not know if they bred.

On 22 October, 1963, at 6°15′S, 71°10.5′E, due west of Eagle Island we saw between us and the island a mixed flock of Wedge-tailed and Audubon's Shearwaters *Puffinus pacificus* and *P. lherminieri*, a gadfly petrel which from subsequent experience I believe to have been Bulwer's Petrel *Bulweria bulwerii*, and Wilson's Storm-petrel *Oceanites oceanicus*. A Curlew Sandpiper *Erolia testacea* also flew over the ship, and we saw many Sooty Terns and Common Noddies. The previous day we saw a mixed flock of twenty light and dark phase and immature Red-footed Boobies *Sula sula* feeding at 6°20′S, 71°00′E, and they now came around again and immatures perched on board. In May, 1965, we passed between Danger and Egmont Islands, and saw two storm-petrels with the white rumps and underparts of the *Fregetta* group, a Pale-footed Shearwater *Puffinus carneipes* and other dark petrels which may have been this species, a male Lesser Frigate-bird *Fregata ariel*, and about fifty boobies, probably all Red-footed.

(Dr. David Stoddart has since also visited Diego Garcia in July–August, 1967. He reports that it is a vast place but now mainly planted with coconuts with regular clearance of the undergrowth so that the ecology is much disturbed. The small mud tortoise is extinct, and the birds now very disappointing. The Mynah, introduced in 1953, is now the commonest bird, in noisy flocks of 40–60 everywhere. The Cattle Egret occurs in parties of up to half a dozen at East Point and Point Marianne, and scarcely elsewhere. Fodies were common, with only one in breeding plumage, and the Turtle-dove still frequent. Most birds were found on the three small islands at the mouth of the lagoon, which had Fairy Terns and Noddies, which probably nest on East Island, where there were also half a dozen frigate-birds, only seen once on the main island, and a lot of turtle-doves. In general, the imminent construction of an air-base on Diego Garcia seems unlikely to do much damage, if only the outlying islands of the Chagos groups can be protected.—W.R.P.B.)

SEYCHELLES

In Mahé the native Black Parrot *Coracopsis nigra* and Kestrel *Falco area* may be seen in captivity in the gardens of the Department

of Agriculture, also frequented by the local ornithologist Mr. P. Loustau-Lalanne. Between Mahé and Praslin on the morning of 26 May, 1965, we saw two Audubon's Shearwaters, one White-tailed Tropic-bird *Phaethon lepturus*, a Bridled Tern *Sterna anaethetus*, Common Noddies, Crested Terns and a young frigate-bird, but none of the Sooty Terns which we had found numerous in October, 1963. Along the shore we saw two types of short-billed, grey-backed wader and a small grey heron. Inland we found the indigenous Seychelles Bulbul *Hypsipetes crassirostris* and Seychelles Sunbird *Nectarinia dussumieri* abundant in the forest, and saw the introduced Indian Mynah, Barred Ground-dove and Madagascar Turtle-dove, but not the Madagascar Fody and Cattle Egret, though they are common on Mahé.

MAURITIUS

There have been a number of reports on the birds of this island, recent ones including general notes by Robert Newton in 1958, and an account of the progressive devastation of the offshore seabird breeding station, Round Island, by the late Jean Vinson in 1964 (Proc. Roy. Soc. Arts Sci. Mauritius 2, parts 1, 3). Through M. Vinson's kindness I was able to visit the last remaining stand of endemic forest in the Rivière Noire district. It was quite a surprise to see White-tailed Tropic-birds flying over the ravine of the Black River, where they are said to breed. Our most notable record was a fleeting glimpse of a Mauritius Kestrel *Falco punctatus*, now reduced to only about ten pairs, and hence one of the rarest birds in the world. The Mauritius race of the Ring-necked Parakeet *Psittacula krameri echo* was seen in the forests whereas it was the introduced form *P.k.manillensis* that was common in the Pamplemouses gardens. The only other native species seen was the Mauritius Manioc-bird (Mascarene White-eye) *Malacirops borbonicus*. Otherwise it was the same dismal catalogue of introductions as on the smaller islands—Turtle and Ground Doves, Madagascar Fody, Indian Mynah, with here the added attraction of Rock Doves *Columba livia* and House Sparrows *Passer domesticus*. If now that Jean Vinson has gone the remaining forest is cut down, the introduced species will soon be all that is left .

TROMELIN, THE AMIRANTES, AND THE FARQUHAR GROUP

In the waters near Tromelin, described by Roger Morris in *Sea Swallow* 16:76–77 and E. Brygoo in *Naturaliste Malgache* 7:209–214, we saw four adult and one immature Masked (or Blue-faced) Boobies *Sula dactylatra*, and in the distance black and white terns, either Sooty or Bridled, and frigate-birds. In 1965 we passed within sight of Alphonse, Marie Louise and Desroches Islands in the Amirantes on 28th May and saw a pair of Turnstones *Arenaria interpres*, Sooty and White Terns, white boobies, and a storm-petrel with white underparts, presumably the White-faced Storm-petrel *Pelagodroma marina*. Off Goelette and South Islands in the Farquhar group next day we saw numbers of Sooty Terns, two White Terns, about fifteen Red-footed and Blue-faced Boobies, and one large all-black male Great Frigate-bird.

COMORO ISLANDS

Approaching Grand Comoro, about 30 miles away to the west, we saw about 300 Sooty Terns, two male Lesser Frigate-birds, and four

White-tailed Tropic-birds. We arrived at Moroni at dawn and stayed till noon; a female frigate, most probably a Lesser Frigate-bird, flew across the harbour, but ashore we only saw Pied Crows *Corvus albus* in the streets and a Cattle Egret on the airfield. Proceeding south to Mayotte on the morning of 8th May, 1965, we saw 100 Sooty Terns, three storm-petrels, a jaeger (skua), one White-tailed Tropic-bird, one all black male Greater Frigate-bird, and a probable female. In the most recent avifauna of the Comoros by C. W. Benson (*Ibis* 103b:5–106) about thirty White-tailed Tropic-birds were reported for the first time, and the frigates were not identified; it appears that both the Greater and Lesser occur. He also reported thirty or forty Bridled Terns on Grand Comoro, but the storm-petrels, probably Wilson's, the Sooty Terns and skua, probably a Pomarine, also seem to be new. All these sea-birds range so widely in tropical seas that their presence offshore was only to be expected. We also saw many Lesser Frigate-birds about Nosi Bé, Madagascar, and two Wilson's Petrels off Diego Suarez on 11th May, 1965.

ROSS'S GULL IN WEYMOUTH BAY

By Radio Officer W. F. Curtis

On the afternoon of 13th August, 1967, I saw a Ross' Gull *Rhodostethia rosea* in Weymouth Bay, England, while anchored roughly half a mile from Portland Naval Base. It was first seen on the sea with a party of mixed gulls about 70 yards away, when the small size attracted attention with the naked eye, and at first I though it might be a Little Gull *Larus minutus*. However it flew very close under the stern when an excellent view of its upperparts was obtained, and I had several good views during the next ten minutes with Wray 11 x 60 binoculars. The following notes were written at the time of the observations: —

"Seen on sea roughly 70–80 yards away with a mixed flock of Herring and Black-headed Gulls *Larus argentatus* and *L. ridibundus*. On size thought to be a Little Gull. Flew within 20 yards of the stern when the thin dark collar round the neck and wedge-shaped tail were seen clearly. Then watched with binoculars at distances down to 40 yards.

Very small in size, similar to a Little Gull, but with a longer tail in proportion. Upperparts whitish except the outer side of the outer primary which was dark, almost black. The tail was relatively long and distinctly wedge-shaped. Underparts were whitish, underwings appeared more grey than white, but were not well seen. The under-tail and legs were not seen at all. The bill was small and the eye appeared to be red. Only the breast showed any sign of a rosy tinge. The flight was a little tern-like, and showed some resemblance to that of a Black Tern *Chlidonais nigra* when seen feeding on one occasion."

(Comment by W. R. P. Bourne: We have known Mr. Curtis for a number of years as a careful, painstaking and experienced observer who produces notes which appear reliable where they can be checked. I have compared this description with skins of adult Ross' Gulls in the British Museum, and find that it agrees with them in all particulars mentioned, and nothing else, and they include all the characters one might reasonably expect the observer to notice except for the fact that the bill should have been black. One distinctive character mentioned

which was visible in skins although not emphasised in any book I have consulted is the very grey underwing. In view of the comment on this character I have no doubt that this must have been a Ross's Gull.)

[Note by Editor: In endorsing and publishing this report I would add that the best R.N.B.W.S. observers, and I include W. F. Curtis amongst these, have now had considerable experience over the years. Not only have they more opportunities than others of noticing seabirds, but by virtue of their natural bent they are at once concerned in the matter of their identity.]

HERE AND THERE WITH THE BIRDS
FROM THE EDITOR'S LOGBOOK

There are moments in the experience of birdwatchers on the high seas, perhaps of no scientific value in the overall study of birds at sea, but which to the man on deck must provide an unexpected, and probably never to be forgotten thrill. They are not always related to large concentrations of birds. I perceive, rightly or wrongly, some such occasions worthy of record from the many passage reports that have come through distant mailing channels during 1967.

Who could not fail to be astonished, as indeed was Captain P. W. G. Chilman on 12th November, 1965? His ship was on passage from Singapore to Curacao via the Cape of Good Hope. About 18 miles from North Keeling Island in the Cocos Keeling Group, 11°42'S, 96°38'E, the ship passed through an enormous concentration of about 6,000 Red-footed Boobies. Nearly all were immatures except for one flock of 500 to 1,000 adults. The young birds varied from solid brown to very pale brown with dark primaries, whitish underparts and greyish-brown tails. Many appeared to have silvery-brown wing-coverts and white tips to their tail feathers. All legs and feet were red to orange and bills varied from dark brown to pinky-blue. We have often reported the habit of these boobies settling on ships; this time no less than fourteen were perching precariously on the foreyard and triatic stay at the same moment. Thirteen days later a further entry occurs:— "25th November, 1965, 13 miles south of Cape Point Light (Cape of Good Hope). This was a terrific day, there was so much to look at that I must have missed hundreds of birds and couldn't pay attention to anything that wasn't close." The record shows 600 Cape Gannets, 200 Great and Cory's Shearwaters, 170 Sooty Shearwaters, 28 White-chinned Petrels, 16 Great-winged Petrels, 4 Great Skuas, 1 Soft-plumaged Petrel and 4 Jackass Penguins.

Eighteen months later, on 10th June, 1967, Chief Engineer L. J. Macinnes was rounding the Cape of Good Hope with a S.W. gale blowing and reported hundreds of Albatrosses and Great Skuas, impossible to count, the Great Skuas outwitting the Albatrosses every time when galley scraps were ditched. About this time the weather was so bad that a porpoise was washed onboard into the scuppers but another sea carried him back over the side."

The enormous flocks of Sooty Shearwaters seen by 2nd Engineer J. O. Brinkley at 16° South in the Humboldt Current on 18th June, 1966, are already mentioned in his article on the Guanay Coast. In December/January, 1966/67, 2nd Officer S. E. Chapman was down that

way too, and he remarks:—"13th January, 1967, 2 miles north of Punta las Animas (near Chanaral, 26°S, 71°W). Passed through huge concentrations of birds, quite a breath-taking sight and impossible to estimate numbers. They must have covered several square miles; in order of numbers, Sooty Shearwaters, Grey Gulls, Chilean Pelicans, Franklin's Gulls, Inca Terns and Southern Fulmars. Sooty Shearwaters in heavy moult, some retaining only 3 or 4 primaries and experiencing great difficulty in becoming airborne as the ship disturbs them, even against a force 3 to 4 breeze."

We have had many reports from the Far East and Robert Cheke's article tells of Whitefaced Shearwaters off the coasts of Japan in July, 1966. But 2nd Officer D. M. Simpson had his moment too when on 16th April, 1967, he observed 3,000 White-faced Shearwaters close off Cape Muroto, Shikoku Island, Japan. Captain D. Stam was also on passage from Japan to the Persian Gulf in Dutch M.V. *Tamara* at the same time and reported 1,000 of this species just south of the Osumi Islands on 22nd April, 1967.

Nearing the entrance to the Persian Gulf on 8th May, 1967, Captain Stam enjoyed a new experience. Darkness had fallen when he was aware of continuous calling by birds which he was unable to identify by their cries. Then to his surprise he realised that groups of Persian Shearwaters *Puffinus persicus* in small parties of 2 to 6 at a time were attempting to land onboard. These attempts continued for about 2 hours but without success. He quotes that the birds are easily recognised amongst tubenoses in the area by their entirely rapid wing beats except in strong winds and their white underparts. Captain Stam has seen these birds in the winter months in the southern end of the Red Sea and the Gulf of Aden, and it would seem unlikely that they could have been mistaken for Brown-winged Terns *Sterna anaethetus*—Sea Swallow 18: 79–80.

On 14th May, 1967, Captain Stam visited Das Island in the Persian Gulf, a small sandy island with low rocky hills on its northern perimeter, on which about 500 White-cheeked Terns *Sterna repressa* were displaying and courting, but no eggs were found at the time. In July, 1958, Mr. V. A. D. Swales had visited Kubbar Island in the Persian Gulf 16 miles east of Kuwait and counted 1,000 to 1,300 White-cheeked Terns with nests and young—*Sea Swallow* 17: 81–82.

AUDUBON'S SHEARWATER *Puffinus lherminieri*.

Second Officer S. E. Chapman writes that while on passage from Panama to Buenaventura, Colombia, on 7th December, 1966, he noticed about 15 Audubon's Shearwaters accompanying the ship. In good light they looked very brown on the upperparts and black under the tail. He mentions his surprise at seeing them flying at least 30 to 50 feet above the sea, frequently circling the ship from beam to beam in the manner of gulls, and wonders whether other observers have noticed them behaving in this way.

A FLAMINGO COMES TO GRIEF

It is not often that a Flamingo crashes onboard, but Chief Engineer L. J. Macinnes, s.s. *Opalia*, remarks: "There was much excitement off Cape Bon in the Mediterranean in September, 1966, when a Flamingo crossing from the direction of Sicily to North Africa hit an aerial

and crashed on deck. The Asiatics excitedly closed in on the bird which luckily had sufficient strength to flop into the sea. It was reckoned however to have already cut its own throat."

WHITE STORK *Ciconia ciconia* ONBOARD s.s. *EMPRESS OF ENGLAND*

Dr. David A. Bannerman has sent this account of a White Stork which came aboard the ship at dusk on 19th March, 1966, 20 miles north of Alegranza in the Canary Islands while the ship was on passage to the U.K.

"It settled after three attempts in the well deck, slept the night on the lower deck, indulged in a meal of herrings, drank from a pail of water and moved to the 'games deck' next morning, later perching on a lifeboat. At noon precisely the usual blast from the siren dislodged our friend which flew off towards Africa."

Dr. Bannerman remarks that on his many voyages along this route he has never seen a stork before. Two photographs taken by Bannerman showed the bird well.

WHY IS A "NODDY" CALLED A "NODDY"

Some members may not know. The name "Noddy" is derived from a behaviour pattern which frequently occurs when two birds meet one another. The first bird quickly dips its head to show its white cap to the other, who, solemnly in his turn, repeats the greeting. Between birds that are mated this nodding usually ends amicably but if birds are strangers a fight often results.

[With acknowledgment to Roger B. Clapp—*The Pacific Bird Observer*, March 1966, No. 4—Editor.]

EXTRACTS FROM METEOROLOGICAL LOGS OF BRITISH MERCHANT SHIPS

Summarised by CAPTAIN G. S. TUCK, D.S.O., R.N.

Through the good offices of the Meteorological Office we receive through Mr. L. B. Philpott a continuous stream of reports on birds described in ships' logs. The increasing interest in birdlife at sea amongst British Merchant personnel would, I am sure, come as an eye-opener to many, and it is only regretted that these reports emanate from persons who are not as yet R.N.B.W.S. members. For this reason the reports are not regulated under the disciplines of the R.N.B.W.S. standard reporting system, and it is often impossible in many cases to identify the species with certainty.

From a study of many reports received during the latter part of 1966 and 1967 a selection of those which may be considered substantiated are recorded below:—

SEA BIRDS

29th March, 1966. Balboa to Papeete, s.s. *Southern Cross*, Capt. L. H. Hopkins, M.N., 6°48′S, 117°47′W. A Sooty Tern *Sterna fuscata* onboard. Regurgitated two small flying fish, 3–4 inches long, headless. Late at night other Sooty Terns landed on various decks.

30th November, 1966. Melbourne to Adelaide, s.s. *Jason*, Capt. H. S. Clarke, M.B.E., D.S.C., M.N. Several storm-petrels onboard exhausted. One was already ringed CSIRO 050–34253, Canberra, Australia.

14th August, 1966. Aden to Singapore, R.F.A. *Tidereach*, Capt. C. G. D. Baker, M.N., 1°10'N, 79°30'E. A Black Tern *Chlidonias niger* reported onboard.

LAND BIRDS

27th February, 1966. Straits of Gibraltar, M.V. *Glenogle*, Capt. J. Moore, D.S.C., R.D., R.N.R. A Hoopoe *Upupo epops* onboard.

7th August, 1966. Aden to Suez, S.S. *Tabaristan*, Capt. W. Mackenzie, M.N. 28°14'N, 33°17'E (Gulf of Suez). Thousands of White Storks *Ciconia ciconia* heading S.S.W. The date and position tallies almost exactly with previous reports.

27th September, 1966. Guyana to U.K., S.S. *Asprella*, Capt. J. J. Greener, M.N., 31°36'N, 53°32'W. An Osprey *Pandion haliaetus* onboard. Remained on triatic stay all night. A very detailed description.

An Osprey was positively identified by S. E. Chapman on 21st April, 1964, in the Caribbean Sea. *Sea Swallow* 17:47.

19th October, 1966. Trincomalee to Aden, M.V. *Asyanax*, Capt. D. L. Emery, M.N. 12°18'N, 49°36'E. A Grey-hooded Kingfisher *Halcyon pallidventris* onboard.

22nd October, 1966. Hong Kong to Aden, M.V. *City of Johannesburg*, Capt. L. R. Jones, 12°15'N, 49°21'E. A Brown-headed Kingfisher *Halcyon albiventris* onboard.

28th November, 1966. New Zealand to Panama, S.S. *Devon*, Capt. J. H. B. Weston, M.N., 4°10'N, 83°28'W, between Cocos and Malpelo islands. A Peregrine Falcon *Falco peregrinus* onboard all day, capturing and devouring small birds.

3rd December, 1966. Fanning Island to Panama, M.V. *Beaverbank*, Capt. D. J. R. Davies, M.N. 7°10'N, 100°35'W, Eastern Pacific south of Clipperton Island, and 560 miles from nearest land, wind E–3, 18 Cattle Egrets *Ardeola ibis* landed onboard, tired, remained onboard overnight, but chivvied off by a Pekinese dog next morning.

REPORTS OF LAND BIRDS AT SEA

Summarised by CAPTAIN G. S. TUCK, D.S.O., R.N.

During 1967 (up to date), 19 separate sea passage reports of land birds and 17 detailed examination reports have been received, the latter supported by excellent photographs and line sketches. Once again in order to avoid cluttering up the summary with many reports of common species in well-known areas, such as the Mediterranean, eastern seabord of North America etc., I have used my discretion in omitting certain reports. I am sure that members whose reports do not appear will continue reporting in full. I should add that only positively identified species are included, and the problem of establishing the identity from descriptions and uncoloured line sketches of many exotic species from far-off lands is no easy task. Where the letter d, followed by a point of the compass occurs this indicates the observed direction of flight.

PASSAGE, SHIP, OBSERVERS	DATE	POSITION	SPECIES	REMARKS
ENGLISH CHANNEL AND NORTH SEA				
Le Havre to Bremen.	1966		Several Bramblings (Fringilla montifringilla).	Wind S.S.E. 3 - 4, vis. poor.
M.V. 'Cienfuegos'	5/6 Oct.	Passing Straits of Dover.		1 found in chartroom, several on deck.
2nd Off: S. E. Chapman	6 Oct.	Sandettie L.V. abeam.	4 Robins (Erithacus rubecula). 4 Chaffinch (Fringilla coelebs). 1 Skylark (Alauda arvensis). 1 Song Thrush (Turdus ericetorum). 1 Meadow Pipit (Anthus pratensis).	Many passerines onboard night 5/6 October.
	6 Oct.	Texel L.V. abeam.	Many Starlings (Sturnus vulgaris). Redwings (Turdus musicus). Fieldfares (Turdus pilaris). 1 Goldcrest (Regulus regulus). 1 Redstart (Phoenicurus phoenicurus). 1 Stonechat (Saxicola torquata). 50 Common Scoter (Melanitta anigra). 1 Mallard (Anas platyrhynchos).	Many flying round ship, most d, S.E. 1 immature Gull, probably Black-backed, drove a starling into the sea and carried it off in its bill. Onboard.
	14 Oct.	9 miles east of Texel Island.	1 Short-eared Owl (Asio flammenus). Several Starlings on deck.	
EASTERN NORTH ATLANTIC—EAST OF 30°W AND NORTH OF 30°N.				
Holland to Freetown	1966	Through English Channel	100 plus Swallows (Hirundo rustica).	Wind N.E. 3 - 4.
H. Neth M.S. 'Luymes'	21 Sept.	50°N, 02°W to 49°N, 05°W.	80 Pipits (Anthus sp).	
Messrs. R. de Jong C. Smeenk J. Wattel			1 Meadow Pipit (Anthus pratensis). 3 White Wagtails (Motacilla alba). 1 Turnstone (Arenaria interpres). 4 Starlings (Sturnus vulgaris).	Ringed Arnhem, Holland S-99. 152. d, S. d, S.E. d, E. Wind calm.
	22 Sept.	47°N, 07°W to 46°N, 08°W.	2 Turtle Doves (Streptopelia turtur). 1 Meadow Pipit. 1 Redstart (P. phoenicurus). 1 Kestrel (Falco tinnunculus).	d, S.S.E. Ringed Arnhem, Holland S-99. 153. Onboard, flew off, fell into sea!
	23 Sept.	41°N, 10°W.	1 Black-tailed Godwit (L. limosa).	d, S.
	24 Sept.	36°N, 11°W to 35°N, 12°W.	30 Warblers (Phylloscopus sp).	d, S.S.W. Southward passage of Warblers.

PASSAGE, SHIP, OBSERVERS	DATE	POSITION	SPECIES	REMARKS
EASTERN NORTH ATLANTIC—EAST OF 30°W AND SOUTH OF 30°N.				
Bremen to Buenos Aires	1966			Ringed N.I.O. A499 onboard before
M.V. 'Oswestry Grange'	5 Oct.	48°45'N, 5°05W.	1 Brambling (Fringilla montifringilla).	passing South of 30°N.
2nd Eng: J. O. Brinkley	10 Oct.	31°30'N, 18°W.	1 Grey Wagtail (Motacilla cinerea).	Ringed N.I.O. 1001.
	12 Oct.	22°15'N, 22°30'W.	1 Lesser Kestrel (Falco naumanni).	Onboard.
	13 Oct.	18°15'N, 24°30'W.	2 Lesser Kestrels.	Male and female. West of Cape
	16 Oct.	4°30'N, 30°W.	Above Kestrels last seen on board.	Kude Is. Within 1 hour had killed and eaten 1 Sandpiper sp onboard. Ship in mid Atlantic.
Holland to Freetown	1966	14°N, 18°W.	7 Swallows (Hirundo rustica).	d, S.W.
H. Neth. M.S. 'Luymes'	28 Sept.		1 Hoopoe (Upupa epops).	Caught, released Freetown 30 Sept.
R. de Jong, C. Smeenk, J. Wattel				but brought onboard by native boys later. It died. Now in Layden Mus. Nat. Hist.
	29 Sept.	15°N, 18°W.	8 Whimbrel (Numenius phaeopus).	d, E.S.E. Wind S.W.-2.
			5 Oystercatcher (Haematopus ostralegus).	d, E.
			6 Sandpiper sp.	d, E.
Capt. D. Stam	6 May	7°45'N, 13°56'W.	Approx. 1,500 Swifts (Apus apus).	Flying South—Why flying South?
WESTERN NORTH ATLANTIC—WEST OF 30°W AND NORTH OF 30°N.				
Panama to Le Havre	1966		1 American Nighthawk (Chordeiles minor).	Onboard, closely observed. Typical
M.V. 'Cienfuegos'	28 Sept.	36°45'N, 30°53'W.		Nightjar flight and method of perching.
2nd Off: S. E. Chapman				Approx. 1150 miles between Canada where it breeds and North Africa.
WESTERN NORTH ATLANTIC—WEST OF 30°W AND SOUTH OF 30°N.				
Freetown to Curacao	'966	Passage across latitude 8°30'N.		
H. Neth. M.S. 'Luymes'	7 Oct.	30°30'W.	1 Turnstone (Arenaria interpres).	Far out in Atlantic circling ship.
R. de Jong, C. Smeenk, J. Wattel	8 Oct.	35°W.	1 White-rumped Sandpiper (Calidris fuscicollis).	Far out in Atlantic circling ship.
	9 Oct.	39°30'W.	1 White rumped Sandpiper	d, W. Wind E.-3.
	10 Oct.	43°30'W.	8 Sandpipers (Calidris sp).	d, S. Wind E.N.E.-3.
	11 Oct.	49° - 50°W.	14 Golden Plovers (Charadrius dominicus).	d, S.S.W. Wind E.N.E. 2.
	12 Oct.	54°W.	1 Turnstone.	
			2 Turnstones.	
	14 Oct. to 16 Oct.	Passing North of Trinidad towards Curacao	Several Blackpoll Warblers (Dendroica striata)—on Southerly migration. 1 Sanderling (Crocethia alba) 1 Pectoral Sandpiper (Calidris melanotos) d, S.	

PASSAGE, SHIP, OBSERVERS	DATE	POSITION	SPECIES	REMARKS
NORTH PACIFIC EAST—NORTH OF EQUATOR AND EAST OF 180° LONGITUDE				
Curacao to Hong Kong	1965			
S.S. 'Hadra'	18 Sept.	Leaving Curacao (Caribbean Sea).	Approx. 30 Little Blue Herons (Florida caerulea).	On island in Schottegat. 23 immature in white plumage, about 7 Adults, dark slate grey.
Capt. P. W. G. Chilman, M.N.	22 Sept.	11°43'N, 74°08'W. 20 miles North of Colombia.	Dozens Bobolink (Dolichonyx orgzivorus). Dozens Black-whiskered Vireo (Vireo altiloquus).	Probably on Southern migration. Probably on Southern migration. also 8 of each species dead onboard.
	23 Sept.	11°12'N, 75°56'W to 78°44'W.	5 Bobolink, 2 Black-whiskered Vireo 1 Barn Swallow (Hirundo rustica). 1 Prothonotory Warbler (Pronotaria citrea).	
	25 Sept.	Balboa.	Approx. 15 Boat-tailed Grackle (Cassidix mexicanus).	
		PACIFIC		
	2 Oct.	10°59'N, 115°16'W.	2 Blue-winged Teal (Anas discors).	One found dead onboard; one very weak, died.
	6 Oct. to 13 Oct.	17°13'N, 139°59'W. to 27°32'N, 179°02'W.	47 American Golden Plovers (Charidrius dominicus). on Southerly migration.	Wind over period N. to N.E. -3 to 4. On most days 2 or 3 birds seen. On 8th Oct. at 21°46'N, 152°57'W, 37 seen in groups coming from N. and flying S. to S.W. steadily at 100ft., calling all the time. Several rested onboard. Hawaii 170 miles S.W.
Coastal, West Coast of Central N. America	1966			
M.V. 'Cienfuegos'	9 Sept.	Gulf of California.	1 Yellow-headed Blackbird (X. xanthocephalus).	Onboard.
2nd Off: S. E. Chapman	15 Sept.	10°40'N, 86°44'W.	1 Gallinule sp.	From detailed description almost certainly Purple Gallinule (Porphyrula martinica). onboard.
			2 Cliff Swallows (Petrochelidon pyrrhonota).	Caught onboard.
	16 Sept.	7°41'N, 82°47'W.	1 American Redstart (Setophaga ruticilla).	
	7 Dec.	6°49'N, 78°29'W. Gulf of Panama.	1 Prothonotary Warbler (Protonotaria citrea).	Onboard.
			3 Tennessee Warblers (Vermivora peregrina).	2 birds onboard.
			15 Egrets.	From description probably immature Little Blue Herons.

LAND BIRDS AT SEA

SOUTH CHINA SEA

PASSAGE, SHIP, OBSERVERS	DATE			
Hong Kong to Singapore S.S. 'Hadra' Capt. P. W. G. Chilman, M.N.	1965 28 Oct. to 5 Nov.	During the passage about 1 dozen Swallows (Hirundo rustica) and 2 Grey Wagtails (Montacilla cinerea) were about the ship.		
	5 Nov.	09°19'N, 111°26'E.	1 Black-crowned Night Heron (N. nycticorax).	Onboard until South of Naval Base at Singapore on 5th Nov. Then flew off strongly.

NOTE: Other reports from South China Sea by 2nd Off. W. C. W. Price, R.F.A. 'Tidereach' in Nov. 1966, and 2nd Off. D. N. Simpson, M.V., 'Chekiang' in April 1967, quote Swallows and Grey Wagtails most commonly seen.

OTHER FAR EAST SIGHTINGS

R.F.A. 'Tidereach' 2nd Off: W. C. W. Price	1966 13 Oct.	1°22'N, 134°E.	1 Water Pipit (Anthus spinoletta).	Nearest land Mapia Is., 0°54'N, 134°17'E.
M.V. 'Chekiang' 2nd Off: D. M. Simpson.				
Western Australia to Singapore	11 Dec.	16°30'S, 113°30'E.	1 Fork-tailed Swift. or Large white-rumped Swift (Apus pacificus).	Onboard.
Japan to New Britain	1967			
	27 Jan.	30°10'N, 141°05'E.	1 Dusky Thrush (Turdus naumanni).	Onboard. Tori Shima Island 35 miles West. Sketched.
Lae to Port Moresby New Guinea	6 May	9°36'S, 151°30'E.	1 Peregrine Falcon (Falco peregrinus).	Observed and sketched onboard.

CARIBBEAN AND GULF OF MEXICO

Trinidad to New Orleans	1966			
M.V. 'Oswestry Grange'	22 Apr.	20°30'N, 80°30'W.	2 Grey Kingbirds (Tyrannus dominicensis).	Roosted onboard.
2nd Eng: J. O. Brinkley	23 Apr.	21°30'N, 85°W.	1 Grey Kingbird. 1 American Redstart (Setophage ruticilla). 1 Common Yellow Throat (Geothlypis trichas).	
	24 Apr.	25°30'N, 87°15'W.	6 Cattle Egrets (Ardeola ibis). 1 Purple Gallinule (Porphyrula martinica).	6 perching on forecastle. 2 captured. Ringed N.I.O. 4230.
	25 Apr.	29°N, 89°30'W.	1 Purple Gallinule 2 Cattle Egrets.	Ringed N.I.O. 4231/2. Ringed N.I.O. A461.

LAND BIRDS AT SEA

PASSAGE, SHIP, OBSERVERS	DATE 1966	POSITION	SPECIES	REMARKS
CARIBBEAN AND GULF OF MEXICO				
New Orleans to Houston	8 May	28°30'N, 93°30'W.	1 Barn Swallow. 1 Eastern Kingbird (T. tyrannus). 1 Rose-breasted Grosbeak (Pheucticus ludovicianus). 2 Yellow-Throat (Geothlypis trickas). 1 Cattle Egret. 4 Blue Grosbeaks (Guiraca coerulea). 1 Oven bird (Sciurus aurocapillus).	
Houston (Texas) to Curacao S.S. 'Hadra' Capt. P. W. G. Chilman, M.N.	1965 11 Sept.	Houston Ship Canal. San Jacinto River. Galveston Bay.	Over 1,000 Little Blue Herons (Florida caerula). Over 1,000 American Egrets (Egretta alba). 200 Great Blue Herons (Ardea herodias). 20 Wood Ibis (Mycteria americana). Several 100 Roseate Spoonbill (Ajaia ajaja). Over 100 Black-necked Stills (H. himantopus).	
INDIAN OCEAN WEST				
	1967			
Beira Area off Portuguese East Africa	27 Jan.	19°37'S, 35°35'E.	1 Roller (Coracias garrulus).	
	19 Feb.	19°40'S, 35°31'E.	1 Cinnamon Roller (Eurystomus pulcherrimus).	
R.F.A. 'Tidereach'	18 Mar. to	19°40'S, 35°31'E.	3 Nightjars sp. From description probably Mozambique Nightjar (Caprimulgus fossii).	
2nd Off. W. C. W. Price	27 Mar.	19°40'S, 35°31'E.		
	28 Mar.	19°40'S, 35°31'E.	1 Roller.	
	1 Apr.	19°40'S, 35°31'E.	3 Red-backed Shrikes (Lanius collurio).	
	6 Apr.	19°40'S, 35°31'E.	1 Lesser Flamingo (Phoenicopterus minor).	
	25 Apr.	19°40'S, 35°31'E.	1 Bee Eater (Merops apiaster).	Onboard. Caught dragonfly.

OBSERVATIONS OF SEABIRDS AND REVIEW OF LITERATURE

By W. R. P. Bourne

We continue to receive a stream of valuable reports covering ever wider areas, which together with the growing international literature on seabirds present an increasingly formidable problem first to edit and then to publish. We have been greatly honoured this year in receiving a grant from the Royal Society towards the cost of publishing "Sea Swallow," a very welcome recognition of its position as a forum for seabird notes. This only deals with part of the problem, and in a purely temporary way, since we cannot expect this form of encouragement on a regular basis, while the growing load of analysis and collation is also becoming an increasing burden on my own time at a period when I have a growing number of other commitments. It becomes clear that the present load is beginning to stretch our resources, and will have to be spread more widely in future, something which may not greatly distress some of those who have tried to wade through our recent summaries. We have therefore been looking for other means of publication to supplement the plain record of members' observations in "Sea Swallow." Thus we hope in future to be able to present rather less frequent summaries of current literature and progress at intervals of several years in the review "Oceanography and Marine Biology," lists of references in the Oceanographic Abstracts and Bibliography section of "Deep Sea Research," and possibly regular reviews of the marine ornithological literature in "Ardea," and members who wish to pursue the more erudite ramifications of the subject may care to look there.

REPORTS RECEIVED IN 1965

During 1965 notes were received from 25 observers or teams, hereafter referred to by their initials, a new record, covering in excess of 91 voyages:—

Captain C. C. Atkinson, M.V. Clan Macintosh. 1 report from the Bay of Bengal, April 1965.

Lt. Cdr. M. B. Casement, H.M.S. Centaur. U.K.—Mediterranean—Red Sea—Kenya—Arabian Sea—Malacca—South China Sea—Aden—Istanbul—U.K.—Mediterranean—U.K.—Aden—Kenya—Suez, Oct. 1961 - May 1963; H.M.S. Shavington, Mediterranean, Sept. 1963 - Nov. 1964. 28 pages of reports.

Mr. S. E. Chapman, M.V. Cienfuegos. Mexico—Rotterdam, Aug. 1964. 6 pages reports.

Captain P. W. G. Chilman. M.V. Anastra. Caribbean—Buenos Ayres—Europe—Caribbean, Aug.-Oct. 1964. 17 reports and 2 census sheets.

Radio Officer W. F. Curtis, S.S. Mobil Skill. Holland—Venezuala and three return passages from there to New York, Philadelphia and New York Aug.-Sept. 1964. 2 reports and 3 census sheets, with notes on hurricanes.

Surgeon Cdr. D. G. Dalgleish, H.M.S. Tiger, Patagonian Channels to Dakar, Oct. - Dec. 1964. 4 pages of reports.

Mr. E. J. Doyle, S.S. Andalusian. U.K.—Mediterranean and return, May 1965. 2 pages of reports.

2nd Officer R. M. Hunt, S.S. Regent Liverpool. Naples—Persian Gulf—Japan and return to U.K. 3 pages of reports.

Captain W. N. H. Jarvis. M.V. Prospero. Various voyages between U.K. and Canada, Nov. 1964 - June 1965. 2 pages of reports.

2nd Officer M. E. Jones, M.V. London Advocate. Yokohama—Panama, Nov. - Dec. 1964. Panama—Pusan, Korea—Western Pacific—Yokohama—Los Angeles—Panama—New York, Jan.-Apr. 1965. 18 pages of notes.

Captain W. A. Kennedy, S.S. Loch Loyal. Rotterdam—Portland (Oregon), Oct. 1964 Swansea—Los Angeles—Antwerp, Feb. - Apr. 1965, Rotterdam—Portland, Oregon, Sept. - Oct. 1965. 13 pages of reports.

Captain K. D. A. Lamb, M.V. Ivernia. Liverpool—New York and return, Dec. 1964 - Jan. 1965. M.V. Media, the same, Mar. - Apr. 1965, M.V. Scythia, the same, May - June 1965. M.V. Saxonia, three trips, Aug. - Nov. 1965. 19 pages of reports.

Messrs. N. Lynagh, J. Fowler and A. J. Odell, O.W.S. Weather Adviser. On passage Greenock to Station India, 59°N, 19°W. and return, Aug. - Nov. 1965. 10 pages of reports.

Mr. E. D. Macdonald, O.W.S. Weather Monitor. On passage to Station Juliet, 52½°N. 20°W. and return, Mar.-Aug. 1965. 12 pages of reports.

Chief Engineer L. J. MacInnes, S.S. Otina. Venezuela to the Mersey, June 1965. 2 pages of reports.

Lt. C. Martell, H.M.S. Tiger. Plymouth—Panama—Chile, Sept. - Oct. 1965. 9 census sheets.

Lt. Cdr. E. G. May, R.F.A. Bacchus. U.K.—Singapore and return, Sept. - Oct. 1964. 3 pages reports.

Captain J. B. Mitchell, M.V. Lagenbank. Panama—Australia—Tonga—Fiji—Samoa—Panama. Oct. 1964 - Jan. 1965. Panama—Australia, Jan. 1965. 9 pages of reports.

2nd Officer D. H. Mobberley, M.V. Yorkshire. Ascension—Durban—Belfast, Dec. 1964 - Feb. 1965. M.V. Lancashire, Le Havre—Cristobal—Tahiti—New Caledonia—Japan—Singapore, July - Nov. 1965. 4 census and 9 report sheets.

Lt. A. Y. Norris and Dr. W. R. P. Bourne, H.M.S. Aurochs. U.K.—Gibraltar and return, Sept. 1964. 13 pages notes. (c.f. Ardeola 11 : 57 - 63).

Captain A. J. Palmer, M.V. Asphalion. Liverpool—Suez—Malaysia—Hong Kong—Japan, Dec. 1964 - Mar. 1965. Liverpool—North China and return via Suez, May - Aug. 1965. 6 pages of reports.

Mr. W. C. W. Price, R.R.S. Discovery. Northern European waters, July - Aug. 1965. 2 pages of reports.

3rd Officer J. D. Simon, S.S. Nyanza. London—Aden—Bay of Bengal and return, March - June 1964. M.V. Barpeter, around the Bay of Bengal, Sydney, and return, May - Aug. 1965. 18 pages of reports.

Captain D. Stam, M.V. Tanera. English Channel—Trinidad—Portland, Maine—Trinidad and return Swansea. 12 pages censuses.

Mr. J. G. Worgan, H.M.T.S. Monarch. London—Aden, Aug. 1965. 2 census sheets.

REPORTS OF BIRDS EXAMINED IN THE HAND

Species	*Observer*	*Date*	*Place*	*Sea Temp.*	*Length*	*Wing-span*	*Weight*
Northern Fulmar	N. Lynagh et al.	1.8.65	59°04′N 19°00′W	13°	520	830	?
Wedge-tailed Shearwater	J. D. Simon	7.6.65	16°42′N 93°38′E	?	380	560	?
Manx Shearwater	E. D. Macdonald	24.4.65	52°52′N 19°46′W	10°	320	730	?
Wilson-Petrel	G. S. Ritchie	23.6.65	06°36′N 57°15′W	27°	170	320	25
Leach's Petrel	W. A. Kennedy	3.10.64	34°22′N 56°28′W	25°	202	440	?
(Leach's Petrel ?)	W. A. Kennedy	9.12.64	37°N 25½°W	?	197	420	?
Leach's Petrel	P. W. G. Chilman	19.10.64	44°05′N 31°44′W	19°	174	464	?
Leach's Petrel	P. W. G. Chilman	4.11.64	41°50′N 32°30′W	18°	194	460	?
Leach's Petrel	P. W. G. Chilman	27.2.65	42°33′N 30°00′W	11°	178	451	?
Leach's Petrel	D. H. Mobberley	10.12.64	20°00′N 17°00′W	18°	184	420	?
Leach's Petrel	G. S. Ritchie	12.5.65	06°25′N 57°10′W	26°	180	400	30
Leach's Petrel	G. S. Ritchie	24.5.65	06°35′N 56°57′W	27°	200	400	35
Leach's Petrel	G. S. Ritchie	24.5.65	06°35′N 56°57′W	27°	190	420	37
Leach's Petrel	G. S. Ritchie	25.5.65	06°38′N 56°55′W	27°	180	420	25
Leach's Petrel	G. S. Ritchie	1.6.65	06°20′N 57°10′W	?	185	375	31
Leach's Petrel	P. W. G. Chilman	25.7.65	12°51′N 127°32′W	27°	191	435	?
Leach's Petrel	W. A. Kennedy	6.4.65	15°14′N 97°34′W	28°	195	436	?
Red-tailed) imm.	J. A. F. Jenkins	7.5.65	06°19′N 94°40′E	29°	488†	1085	?
Tropic-bird) ad.	P. W. G. Chilman	30.7.65	19°56′N 152°22′W	25°	590	1145	?
(Brown Booby ?)	J. A. F. Jenkins	26.5.65	16°30′S 145°40′E	25°	600	1430	
White-cheeked Tern	L. J. Macinnes	19.4.65	Persian Gulf	20°	?	?	?
Brown-winged Tern	A. J. Palmer	15.3.65	15°30′N 41°43′E	26°	280	610	?
Brown-winged Tern	J. O. Brinckley	18.5.65	13°30′N 42°45′E	29°	380	690	?
Sooty Tern	D. H. Rayfield	20.7.65	09°42′S 43°30′E	24°	400	820	?
Sooty Tern	J. H. Adams	25.4.65	02°09′N 83°00′E	29°	331	505	113
Common Noddy	M. B. Casement	27.1.62	07°59′N 108°54′E	?	385	790	?
Little Auk	E. D. Macdonald	13.4.65	52°30′N 20°11′W	10°	240	?	?

(Scientific names and any further information in systematic list; temperatures in °C., measurements in mm., weights in grams.)

The total of 174 report and 20 census sheets and 3 pages of other notes represents a slight decline in the total amount of paperwork, but it continues to gain in quality, which from the point of view of the analyser represents a nett gain, while there was a welcome increase in reports of birds examined in the hand to 27 after the decline last year. There are many notes of interesting observations from exciting places, but as usual the lists of voyages and observations can surely speak for themselves here. My main comment is that it remains desirable that people should be careful to record at the time full details of anything that seems unusual, as it may be difficult to check up later, and also of birds examined in the hand, as these provide increasingly valuable sources of information where every item recorded may be either new or vital for identification. It may also be useful to stress that while we try to summarise the main points in the material received here, it also still all goes into the files in the British Museum (Natural History) for further analysis of the routine information later, so we still need this; while the Editors of "Sea Swallow" and other journals also remain keen to receive separate accounts of events of special interest, and we are always glad to advise over their preparation whenever we can be of assistance.

NOTES ON SPECIES

PENGUINS: FAMILY *SPHENISCIDAE*

Records include a report of 20 Magellan Penguins *Spheniscus magellanicus* at 34½°S 53¾°W. on 6 September 1964 by P.W.G.C., and twos and three, presumably of this species in the Patagonian Channels on 28 October 1964 by D.G.D. Among reports in the Literature B. Rowlands and B. G. Donnelly report the occurrence of similar markings on the allied Jackass Penguin *Spheniscus demersus* of South Africa (Ostrich 36: 44, 225-227).

There is a further spate of information about the southern species. J. Prevost and J. Sapin-Jalouste review their ecology in Biogeography and Ecology in Antarctica, ed. J. van Meeghem and P. van Oye, Monogr. Biol. 15:551-648, and the latter has discussed the ecology of Adelie Penguins *Pygoscelis adeliae* at length in Expeditions Polaires Francaises No. 208 (Hermann, Paris). W. J. L. Sladen and others also summarise aspects of their life history in the Antarctic Journal 1:141-142; one year old birds do not visit the colonies, and 7% then return each year at 2-, 3- and 4-years old, some starting to breed at 3- and 4-years old, though not many at first, and with little success, rearing one rather than two chicks. 60% of the food is composed of 15 species of Crustacea, 39% of three species of fish, and the rest of one Cephalopod; Leopard Seals are a main cause of mortality, especially to young birds. Other work includes observations near Szowa Base by T. Matsuda (Antarctic Record, Tokyo, 20:1-7); at Cape Hallet by B. E. Reid, who has also investigated the egg and the value of its yolk reserve (New Zealand Journal of Science 8:503-514; Records of the Dominion Museum, Wellington 5:11-37, 185-193); in the Ross Dependency by R. H. Tayloe, who has also investigated the growth of the chicks (Antarctic 3:566-570; New Zealand Journal of Science 5:191-197); while R. L. Penney has investigated their faithfulness to their territory and mate, means of navigation, and moult (Premier Symposium SCAR on Antarctic Biology, Paris: 401-406); Bioscience 15:268-270; Auk 84; 61-71); and J. Prevost their thyroid cycle (Premier Symposium SCAR on Antarctic

Biology, Paris: 509). W. J. L. Sladen and others report the occurrence of tracks presumably of this species far inland in Antarctica, and also the constancy with which they can maintain their body temperature even in such places (Auk 77:466-469; Antarctic Journal 1:142-143).

Among work on other species of penguin, B. Stonehouse reports an increase in Chinstrap Penguins *Pygoscelis antarctica* in South Georgia (Ibis 109:277-278) and gives some other comments on southern species in Tuatara 15:129-132, while W. J. L. Sladen discusses the range of the Chinstrap and Adelie in the Premier Symposium SCAR on Antarctic Biology, Paris: 359-363, showing that the former has started spreading around Antarctica, possibly owing to an increase in the plankton following a reduction of whales, E. M. van Zinderen Bakker reports on the breeding of Gentoo Penguins *Pygoscelis papua* on Marion Island, where they lay two eggs in June, incubate for 30 days, changing over daily; then brood the young for a fortnight; gather them into a creche at a month, and finally feed them at sea (South African Journal of Science 1967:240-246). R. Guillard and J. Prevost and then J.-L. Mougin report on the Emperor Penguins *Aptenodytes forsteri* at Pointe Geologie in Adelie Land in 1963 and 1964 in Oiseau 34 (suppl.): 33-51 and 36: 167-226, reporting among other things that they lose more eggs than chicks and locate the latter by voice in the distance and sight closer to; and B. Stonehouse reports on colonies at Cape Crozier and Beaufort Island in Nature 203:849-851 and No. 5039:25-26.

ALBATROSSES: FAMILY *DIOMEDEIDAE*

A review of extralimital records of these and other petrels will be found in the Ibis 109:141-167, and a description of the southern species likely to be met in the northern hemisphere in British Birds 59:376-384.

Wandering Albatross *Diomedea exulans*. On a return voyage to South America P.W.G.C. met the first at 22½°S. 38½°W. on 3 September 1964, with immatures over the next few days, and returning saw them north to 23½°S. 41½°W. on 12 September, while D.H.M. met five going south at 23½°S. 4°E. on 21 December 1964, three at 22°S. 174½°E. on 7 September 1965, and one south-east of New Caledonia next day. Dr. F. Goethe has been kind enough to supply details of three birds reported by Mrs. Goethe between Lands' End and the Scillies on 26 July 1962 (Bonner Zoologische Beitrage 17:249) which unfortunately are not sufficiently conclusive to prove a first British record, but the first bird for the North Pacific has recently been photographed where it came ashore north of San Francisco on 11-12 July 1967 (Auk 85:503-504).

Short-tailed Albatross *Diomedea albatrus*. M.E.J. recorded a single solitary white albatross with black-tipped wings and tail, larger than the usual North Pacific species, flying south-east at 27°N. 173½°W. on 21 January 1965 which can only be this species. There have recently also been two more possible sight records by R. M. and E. M. Boggs and G. A. Sanger off western North America, apparently the original nursery for young birds (Murrelet 45:47,48), while H. Fuchimoto has reviewed the meteorological implications of their distribution (Miscellaneous Reports of Yamashina's Institute for ornithology and Zoology 3:32-37).

Black-footed and Laysan Albatrosses *Diomedea nigripes* and *D. immutabilis*. Crossing the Pacific from Japan to California in November 1964 M.E.J. first encountered both at 36¼°N. 143½E. on the

15th, with a maximum of 50 each at 42½°N. 173½°W. on the 19th, and saw the Laysan to 40°N. 161½°W. on the 22nd, with occasional Black-foots to 41°N. 126°W. on the 27th. Returning in January 1965, he saw the first Blackfoot at 25°N. 136½°W. on the 15th with a maximum of a hundred following at 26½°N. 149°W. on the 17th, but no Laysans until 26¾°N. 167¼°W. on the 20th. They reached a maximum of 20 at 27½°N. 180°E. on the 22nd, where there were at least 50 Blackfoots; the last was seen of both at 30°N. 146°E. on the 29th. Eastbound again in March 1965 both appeared at 36°N. 160°E. with peaks of about 25 at 36°N. 168-175°E. on the 24th-25th, the last Laysan at 35°N. 155°W. on the 28th March, and the last ten Blackfeet at 35°N. 125°W. on 1st April.

Sailing from New Caledonia to Japan in 1965 D.H.M. saw the first four large dark albatross-like birds at 1°N. 158¾°E. on 30 September, a definite Blackfoot (dark bill, pale head, white rump and upper tail) at 7°N. 156½°E. with a sea temperature of 28°C. next day, a possible one at 13°N. 154°E. the day after, two with five Laysans at 34°N. 145¼°E. with a water temperature of 24°C. on the 6th, and the last two Blackfoots at 38¾°N. 143°E. next day.

G. A. Bartholomew and T. R. Howell describe experiments on the nesting behaviour of the Black-footed and Laysan Albatrosses in Animal Behaviour 12:449-559, while H. I. Fisher reports that the Laysan normally has a body weight of 3 kg. but loses 18-25% while incubating, that on Midway Atoll the population has remained stationary at 88,000 pairs on East Island while it has been reduced from 120,000 to 92,000 pairs on nearby Sand Island by military activity in the period 1956-7 to 1962-3; and that in addition to deliberate slaughter and mortality from bird-strikes around the airfield there are also many deaths from birds hitting radio antennae (Ibis 109:373-382; Auk 83:670-673; Condor 68:229-242; Audubon, July-August 1966).

Black-browed, Yellow-nosed and Grey-headed Albatrosses *Diomedea melanophris, D. chlororhynchos* and *D. chrysostoma*. There are the usual records from the southern hemisphere. The main news is a series of reports of the results of investigations of the life history of Black-browed and Grey-headed Albatrosses by means of ringing by W. L. N. Tickell and others. The more important findings include the discovery that the Black-brow is an annual breeder that rears its young comparatively fast and then migrates north to winter over the continental coasts (different populations going to different areas, most Falkland birds to South America and most South Georgia ones to South Africa, for instance, where a good many immature birds in particular appear to be recovered by fishermen); whereas the Grey-head takes a month longer to rear its chick, winters at sea in the south (rather more of the few South Georgia birds recovered coming from Australia), and only breeds every other year. Young Grey-heads start returning to the breeding colonies when two years old, and Black-brows at three, and most are back by the time they are five, though it is not clear at what age they start breeding yet; when they do start up to 2 per cent of the birds were found to have two eggs, but these usually seem to come from different females laying in the same nest. Experiments with colour dying birds produced 57 subsequent reports at sea, mainly within 150 miles to the north, and it might be useful to develop this technique further in the future. (Nature 213:315–316; Emu 66:357–367; Ibis 108: 126–129; Bird Banding 38:36–40). The strong northward migration of

the Black-browed Albatross presumably helps explain the frequency with which it reaches the North Atlantic, where a bird visited a Gannet colony in the Westmann Islands in 1966 and one summered on the Bass Rock in 1967 and 1968, among a growing number of other records in British seas (British Birds 61 : 22–27).

Sooty and Light-mantled Sooty Albatrosses *Phoebetria fusca* and *P. palpebrata*. We have the usual South Atlantic records of the former. E. M. van Zinderen Bakker provides useful notes on the situation where the two species breed alongside each other on Marion Island, the former nesting along the coast and the latter inland in South African Journal of Science 1967 : 240–246.

TRUE PETRELS: FAMILY *PROCELLARIIDAE*

General publications on the petrels (in some cases including the other families as well) include recommendations for scientific nomenclature by fifteen authors (Ibis 107 : 401–405), a review of breeding seasons by N. Kuroda (Japanese Journal of Zoology 12 : 449–464), of vagrancy and of "lost" species and a report on the subfossil remains of what was originally the most important colony in the world on the Chatham Islands by myself (Ibis 109 : 1–7, 141–167; Bulletin of the British Ornithologists' Club 85 : 97–105), of the systematics and distribution of Antarctic species by R. C. Murphy (Premier Symposium SCAR on Antarctic Biology, Paris : 349–359), and of aspects of their general biology and breeding behaviour by L. E. Richdale and J. Warham (Proceedings of the Zoological Society of London 27 : 87–155; Antarctic Biology 389–394).

Northern and Southern Giant Petrels *Macronectes halli* and *M. giganteus* John Warham and I have defined two species of Giant Petrels characteristic of the subantarctic and antarctic zones of surface water in Ardea 54 : 45–67. The first is comparatively dark with no pale phase and appears to be comparatively sedentary around the subantarctic islands, where it tends to breed alone in sheltered situations; the second breeds socially in open situations in higher latitudes, is polymorphic with dark and pale phases, and migrates into lower latitudes when young. The two are very hard to tell apart even in the hand, but breed alongside each other at different seasons six weeks apart at Macquarie Island and probably other intermediate sites along the Antarctic Convergence. The movements of the southern populations breeding in Antarctica have recently been discussed by M. N. Orton (Emu 63 : 260) and the distribution of the pale phase by Robert Hudson (Ardea 56 : 178–183) who shows that they form about 9 per cent of the population in the South Orkneys and (despite suggestions to the contrary) appear to migrate in much the same way as the dark phase.

Cape Pigeon or Pintado Petrel *Daption capensis*. C. M. recorded one at 8°S. 79°W. off Peru on 9 October 1964; otherwise they were not reported commonly north of 20°S. R. Pinder describes the colony of 12,000 pairs at Signy Island in the South Orkneys in the British Antarctic Survey Bulletin 8 : 19–47. The birds leave in mid winter, and return in early September if the sea is open, otherwise when the ice breaks in October. The pairs reform at the nest, which is defended by the male. The female goes to sea for three weeks before laying in late November, and the male then incubates for the first four or five days, and then they take turns. The chick is brooded for the first sixteen days, and fed by both parents until it fledges, although like

other petrels it loses weight in the last week. The birds leave by late February, but a few may return in late March and April. One- to two-thirds of the eggs produce chicks, most loss occurring immediately after laying; ringing recoveries have come from Tasmania, the New Hebrides, and Chile in the off-season. In a subsequent paper Robert Hudson also gives estimates of adult survival for this species and the Snow Petrel (p. 63–73); some 65–70 per cent are lost before they start breeding in their fourth year, and then 5–6 per cent annually, equivalent to an expectation of life for adults of 16–20 years (the situation is much the same for the Snow Petrel *Pagodroma nivea*; its breeding biology is also described by D. A. Brown in ANARE Scientific Report (B) I, and its olfactory apparatus by B. C. Bang in Nature 205 : 513–515).

Northern Fulmar *Fulmarus glacialis*. M. E. J. provides a number of records from North Pacific crossings. Eastbound in November 1964 he started to meet dark birds at 36°N. 143½°E. on the 15th, met many at 42½°N. 165-173½°E. on the 18th–19th and saw the last at 40°N. 155°W. on the 23rd. On a second voyage in March 1965 he met two light birds at 35°N. 144½°E. on the 21st, another and frequent dark ones at 36°N. 160 E. on the 23rd, some intermediate birds among the dark ones at 36°N. 168°E. next day, and then only dark ones, including several thousand with albatrosses, kittiwakes and phalaropes over an area rich in plankton at 36°N. 170°W. on the 26th, and the last two at 38°N. 155°W. on the 28th. He comments that they appeared slimmer and swifter than Atlantic birds, and unlike them ignored ships. The northern Fulmar has also been compared with the southern Fulmar *Fulmarus glacialoides* by J. L. Mougin in l'Oiseau 37 : 57–103; the northern one visits the nest in winter but the southern does not. The nests are very similar, but in the south the site is more sheltered. The northern bird incubates for 49 days to the southern's 46, but both the young fledge at 53 days. Losses of eggs and chicks are about 55 per cent in the north and 42–62 per cent in the south; in general the two birds seem rather similar. J. W. Macdonald and others have also recently described an epidemic of Puffinosis in north Scottish birds, possibly caught from gulls, and K. G. Walker has suggested that this may explain the dishevelled appearance that I attributed to old age in birds seen on St. Kilda in the summer of 1960 (British Birds 60–356–360, Bird Study 13 : 209–213, 14 : 247); the fact that I saw no similar birds later, when passing St. Kilda in 1966, suggests he may be right, though the behaviour of the birds originally seen still remains rather hard to explain and the arguments advanced to explain the spread of the species still seem valid. Among other notes, P. J. Boylan reports that the general wreck in the North Sea in the spring of 1962 was also noticed in Yorkshire, where it involved at least 342 birds, many of the small Arctic form (Naturalist 903 : 109–113); and A. Ferguson has reviewed observations along the Irish coast in 1965, most of which appear to be referable to feeding movements, with the addition of an exodus from the breeding sites in late August and early September (Seabird Bulletin 3 : 63–68).

Prions, genus *Pachyptila*. L. E. Richdale reports comparative studies on the Broad-billed and Fairy Prions *Pachyptila vittata* and *P. turtur* on Whero Island, New Zealand. The Broad-billed Prion average 196g. when adult and feeds on microscopic animals filtered from the water through its bill lamellae. The Fairy Prion averages 132g., and feeds on Crustacea averaging about 15mm. long picked from the sea surface. The sexes take turns in incubating for spells of about a week, and the incubation

period is about 45 days, while the chick fledges in seven weeks (Proceedings of the Zoological Society of London 27:87–155). E. M. van Zinderen Bakker also provides comparative notes on *P. (vittata) salvini* and *P. turtur* breeding on Marion Islands; here the (Lesser) Broad-billed Prions are very widespread further inland while the Fairy Prions breed along the coast (South African Journal of Science 1967:240–246). K. H. Voous records two members of the genus (probably *P. vittata* ?) off East Africa as far north as 9°40'S. 40°30'E. on 14 July 1965 (Ardea 54:89).

Larger Gadfly-petrels, genus *Pterodroma*. D. G. D. reports (without a description) a single Schlegel's Petrel *Pterodroma incerta* at 44°S. 60½° W. on 9 November 1964, and several singly at 32°S. 50°W. on the 17th. D. H. M. identifies as possible Trindade or Herald Petrels *P. arminjoniana* (= *P. heraldica*) three medium-sized, brownish petrels with light heads, whitish underparts and an underwing broadly edged with black seen at 12°S. 137°W. on 20 August 1965. J. B. M. identifies with varying confidence as Phoenix Petrels *P. alba* single birds seen at 4°N. 146½°W. on 19 January 1965, at 6°N. 136½W. on the 21st, at 6°N. 125½°W. on the 23rd, and at 7°N. 94°W. on the 29th, also at Hawaiian Petrel *P. phaeopygia* birds seen at 5°S. 117½°W. on 29 October 1964, at 6°N. 131°W. on 22 January 1965, at 2½°S. 116½°W. on 12 May 1965, and at 3½°S. 122°W. next day. D. H. M. reports another at ½°N. 99°W. on 14 August 1965. W. F. C. provides detailed descriptions of Capped Petrels *P. hasitata* seen one mile off Cape Maysi in the Windward Passage on 29 August 1964, and at 18°N. 67½°W. on 21 September 1964 (W. F. J. Morzer Bruyjns has also recently reported up to 40 at 12°N. 72°W. on 1 May 1962 and at 16°N. 72°W. on 20 April 1966, and E. Nieboer a possible bird at 25°N. 72°W. on 16 January 1965 in Ardea 55:144–145, 54:88). J. D. S. reports first 200 and then 15 Soft-plumaged Petrels *P. mollis* around 28°S. 112°E. on 18 June 1965 and one at 23°S. 110°E. next day (the first party at least sound like prions, though ?), and J. B. M. four more at 21½°S. 176½°E. on 1 January 1965 (described as having dark underwings contrasting with white under the body; perhaps more likely to be some such species as the Phoenix Petrel *P. alba* there?); also small dark petrels which could be among other things the lost Macgillivray's Petrel *P. macgillivrayi* at 19½°S. 176½°W. on 8 November 1964, 24°S. 178½°E. on 31 December 1964, 21½°S. 176½°W. next day, and 10°S. 180°E. on 23 May 1965.

Smaller Gadfly-petrels, genus *Pterodroma*. There is the usual puzzling series of records of the small "cookilaria" petrels. M. E. J. saw presumed Bonin Petrels *P. hypoleuca* at 42°N. 178°E. on 20 November 1964, 27°N. 167°W. and 173½°W. on 20 and 21 January 1965 (the last with the Short-tailed Albatross) and at 37¾°N. 162½°W. on 27 March 1965; they were described as grey above with a dark W on the back, cap and eye spot, and wing lining, and a swift flight in a strong wind. Several thousand were seen off Gaeyama Petto (ca. 30°N. 125°E. ?) on 15 February; two distant birds that were either this species or Hawaiian Petrels P phaeopygia at 35¼°N. 125¼°W. on 1 April 1965. Three smaller paler birds with more white on the upper wing, a less noticeable underwing pattern and a more erratic flight seen at 22¼°N. 109¾°W. on 8 April 1965 were presumably Cook's or Stejneger's Petrels P. *cookii* or *P. longirostris*. Eighteen birds seen by D. H.M. in small parties at 3½°S. 111¼°W. on 16 August 1965 described as being of medium size, with a swooping, soaring type of flight, "light black, grey and red brown

with a distinct inverted W mark" above, a dark patch around the eye and edges to the underwings, the rest of the underparts white, the tail short with a dark tip, and the feet pale, may have been a mixed bag including the last species or more probably Gould's Petrel *P. leucoptera;* he had three more at 8°S. 125°W. on the 18th, and six possible Bonin Petrels as well at 34°N. 145°E. on 6 October 1965. J. B. M. also had many possible Gould's Petrels at 5°S. 117½°W. on 29 October 1964, with smaller numbers on most days to 21½°S. 177½°E. on 10 November, scattered birds at 26½°S. 173½°E. on 30 December 1964, a few at 19°S. 180°W. on 7 January 1965.

Recent publications on gadfly petrels include a description of the behaviour of the recently described species Barau's Petrel *Pterodroma baraui* visiting its inaccessible nests in the inland cliffs of Reunion by C. Jouanin and F. B. Gill; apparently it s quite common and probably lays about November and fledges in April (Oiseau 37:1–19); and also a description of the breeding behaviour of the White-headed Petrel *P. lessonii* at Macquarie Island by John Warham; they come to land in August, lay about the beginning of December, both sexes incubate for 8–9 weeks, the adults leave the chick a few days after hatching, and it fledges at about 100 days. The adults start the body moult while breeding, but defer the wing moult till the period of about 11 weeks when they go away to sea afterwards (Emu 76:1–22).

C. F. Worster and D. B. Wingate have also reported the discovery of DDT residues presumably derived from its food in the Bermuda Petrel *P. cahow* which may be associated with a declining reproductive rate, although it has also increased from 6–7 pairs in 1958 to 22 in 1967 (Science 159:979–981); R. A. Falla the occurrence of the east Pacific race of Stejneger's Petrel *P. longirostris* and also Gould's Petrel *P. leucoptera* in New Zealand (Notornis 9: 275–277); and Sir Hugh Elliott and I are of the opinion that the correct scientific name for the Kerguelen Petrel, recently the subject of debate, should remain *P. brevirostris* (Ibis 107: 548–550).

Bulwer's and Jouanin's Petrels *Bulweria bulwerii* and *B. fallax*. Among other records, A. Y. N. and I saw the first unusually far north in the Atlantic at 39½°N. 10°W. off Portugal on 5 September 1964, and D. S. saw unusual numbers of the second, including 100 at 15°N. 51°E. on 24 August 1965, followed by uncountable masses off Ras Fartak, and still 50 out in the Indian Ocean at 17½°N. 56½°E. next day.

Cory's or the Mediterranean Shearwater *Calonectris diomedea* (= *Puffinus kuhlii*). Among numerous records, M.B.C. noted 200 feeding on shoals of fish with Manx Shearwaters and gulls off the Piraeus for ten days in late October 1963, and one off Malta as late as 24 November 1964. F. H. Lesser and L. E. Williams have recorded several hundred off eastern Florida in late August 1965 with others later, presumably non-breeders migrating south (Auk 84:278–279). P. A. Clancey has recorded the first bird of the North Atlantic race *borealis* collected wintering off South Africa, taken off Durban on 30 April 1963 (Ostrich 36:36), and C. Jouanin and F. Roux have described the present welfare of the great colony on the Salvages, where the birds are partly diurnal and remain numerous despite a toll of 20,000 young taken by man annually (Bolletin Museum Municipal do Funchal 20 (89):14–28).

White-faced or Streaked Shearwater *Calonectris* (= *Puffinus*) leucomelas. M. B. C. describes one seen at 9½°N. 110°E. in the South China Sea on 15 January 1962, and M. E. J. reports occasional birds between

the Phillippines and Hong Kong in February 1965, followed by more off Japan in March, east to 35°N. 144½°E. on 21 March 1965. Some hundreds of large petrels with white underparts seen by D. H. M. from 39°N. 143°E. on 7 October 1965 to 35°N. 131½°E. on the 16th also seem rather more likely to have been this species than Mottled Petrel *Pterodroma inexpectata* as suggested. N. Kuroda reports that some 400 birds, mainly immature, were wrecked inland in Japan on 19–24 November 1965, presumably by bad weather at the time of fledging (Miscellaneous Reports of Yamashina's Institute for Ornithology and Zoology 4:396).

Grey-backed Shearwater *Puffinus bulleri*. D. H. M. reports nine at 4°S. 113°W. on 16 August 1965, with more west to 8°S. 126°W. over the next two days and again between 24°N. 149½°E. on 4 October 1965 and 34°N. 145°E. two days later. These could be migrants from the North Pacific returning to New Zealand, but it seems possible also that in this and some similar cases there has been confusion with rather similar White-necked Petrels *Pterodroma externa*, which are now also known to migrate north across the equator in this area as well (P. Gould, in litt.), and which may also appear grey above with a dark W and white below as described here, though they also have a white face and shorter, thicker dark bill.

Wedge-tailed Shearwater *Puffinus pacificus*. In the Arabian Sea D. S. reports hundreds off Ras Fartak on 25 August 1965, a thousand at 22½°N. 59½°E. on 1 Steptember 1965 with numbers elsewhere in the region, and 900 at 15°N. 52°E. on 30 September 1965; these figures are however somewhat surprising since other dark petrels such as Jouanin's Petrel and the Pale-footed Shearwater are normally commoner here. In the Bay of Bengal J. D. S. had one come aboard at 16°42′N. 93°38′W. off the coast of Burma on 7 June 1965; the description includes the wedge tail, a grey bill black at the tip, pink feet, and somewhat small measurements: wing 240mm., tail 120mm., bill 35mm., tarsus 40mm. In the South China Sea R.M. H. had at least 50 at 13°N. 114¾°E. on 14 September 1964 and six at 14¼°N. 116°E. on the 29th, while in the Pacific M. E. J. reports light phase birds at 11½°N. 89°W. and 8½°N. 84°W. on 3–4 December 1964 and again from 7°N. 81°W. to 11½°N. 93°W. on 6–8 January 1965, small parties of them at 18½°N. 104°W. on 9 April 1965, and then both light and dark birds to 7°N. 81¾°W. on the 13th. Further south J. B. M. reported several, presumably dark, at 19½°S. 176½°W. on 8 November 1964 and again at 23½°S. 172°E. on the 11th, with several dozen at 24½°S. 166°E. next day, some at 29°S. 168½°E. on 29 December 1964 and several at 24°S. 178½°E. two days later, a few at 19°S. 175°W. on 6 January 1965, one at 15°S. 176°W. on the 10th, hundreds at 4°N. 146½°W. on the 19th, and two at 8°S. 151°W. on 18 May 1965.

Great Shearwater *Puffinus gravis*. Among numerous observations in the autumn of 1964 S.E.C. reported continuous records from 44¾°N. 42½°W. on 13 August to 49½°N. 14½°W. four days later, on which day he saw 23 Great Shearwaters, 12 Cory's, 17 unidentified "large Shearwaters" and a Sooty. P. W. G. C. had them at both ends of the Atlantic, including six at 22½°S. 39½°W. on 3 September and others south to 32¾°S. 50½°W. on the 5th, some 175 off Cape Polonio, Buenos Aires on the 10th with more north to 15½°S. 35¾°W. on the 14th, more again at 42½°N. 31°W. on 3 October, 94 at 46¾°N. 20¼°W. next day and others to 49¼°N. 8¼°W. on the 6th, 77 at 49½°N.

16½°W. on the 17th, and many mixed in a proportion of about 40:60 with Cory's Shearwaters in combined flocks of first 250 and then a thousand birds around 44°N. 32°W. on 19 October. In the spring of 1965 K. D. A. L. reported very many on northbound migration at 46½°N. 41½°W. on 19 May, and many again at 46°N. 39°W. on 1 June, while in the autumn N. L. had up to 50 at a weather ship at 54°N. 12°W. between 15 September and 28 October, and C. M. 270 in a day at 47½°N. 13°W. on 11 September. Other records are given in R. G. Newell's account of the invasion of British waters at this time (British Birds 61:145-169).

Pale-footed Shearwater *Puffinus carneipes*. In the New Zealand area J. B. M. reported several at 23½°S. 172°E. on 11 November 1964, large feeding flocks at 29°S. 168½°E. on 29 December 1964, and one at 27°S. 173°E. next day. J. D. S. reported 15 doubtful birds near a school of 150 porpoises at 17½°N. 84¾°E. in the Bay of Bengal on 13 May 1964, and another (flesh coloured bill noted) off the Little Basses sailing south from Madras five days later. In the Arabian Sea D. S. noted four birds with light bills at 18°N. 57°E. on 29 September 1965 (and it seems likely some of the numerous birds which he identified as Wedge-tailed Shearwaters around here were this species too). P. A. Clancey has also recently reported the second occurrence for South Africa south of Durban on 24 April 1966 (Ostrich 37:197).

Sooty Shearwater *Puffinus griseus*. In the South Atlantic P. W. G. C. met four at 28¼°S. 46°W. on 11 September 1964 and one at 26°S. 43½°W. next day. In the North Pacific A. G. Fletcher and L. R. Brand have reported that many occurred with Pink-footed Shearwaters *P. creatopus* in the Gulf of California in late June 1965 (Condor 68:600), and D. H. Woodside and R. L. Walker a record for the Hawaii group (Elepaio 21:83–90). In the North Atlantic G. Huyskens and P. Maes discovered a large southward passage around the northwest extremity of Spain in September 1965 (Seabird Bulletin 3:41).

Short-tailed Shearwater *Puffinus tenuirostris*. J. B. M. recorded flocks from 37°S. 151°E. to 32°S. 163°E. while passing through the breeding area off south-east Australia on 26–28 December 1964. In the North Pacific there was a severe wreck in Japan of birds on northward migration at the end of May 1964, with 2,520 found dead along 12km. off shore in Kyushu alone (N. Kuroda and K. Ozawa, Tori 18:199, Miscellaneous Reports Yamashina's Institute for Ornithology and Zoology 27:114–117). D. L. Serventy reviews some aspects of his work on their population ecology in the Proceedings of the XIV International Ornithological Congress, Oxford: 165–190

Christmas Shearwater *Puffinus nativitatis*. J. B. M. reported a few at 6°S. 134°W. on 15 May 1965, and one at 9½°S. 168½°W. on the 21st.

Manx Shearwater *Puffinus puffinus*. In the north-west Atlantic S. E. C. reports one at 42½°N. 49°W. on 12 August 1964, among other records. In the North Pacific M. E. J. found black and white shearwaters numerous at 20¾°N. 107¼°W., 200 miles south of the Revilla Gigedos, home of Townsend's Shearwater *P.p. auricularis*, on 30 November 1964, saw a slightly smaller bird at 17¼°N. 101½°W. next day, two at 11½°N. 89¼°W. on 3 December 1964, four at 16½°N. 105°W. on 10 January 1965, one at 26½°N. 149¼°W. on the 17th which appeared somewhat larger and may have been the Hawaiian race *P.p. newelli*, and finally numbers of "black-vented" birds presumably

belonging to the Californian race *P.p. opisthomelas* at 22¼°N. 109¾°W. and 18½ N. 104¼° W. on 8–9 April 1965. Among various publications, J. H. Phillips and the late S. L. B. Lee have described the southward migration past Erris Head, north-west Ireland, in the autumn, noting that most birds are seen with the northerly winds behind depressions (Bird Study 13:284–296), and David Summers has reviewed other movements seen around Ireland, probably mainly involving feeding birds from various breeding stations; C. M. Perrins has discussed how such observations may fit into what is known of the life history at the Pembroke islands and elsewhere; P. Bennett the probable recolonisation of the Calf of Man following a drive to exterminate the rats there (Seabird Bulletin 4: 21–27; 3:42–44; 2:60–61); G. V. T. Matthews has discussed their powers of orientation (Auk 81:132–146); and Peter Conder has further documented the occurrence of puffinosis in the Welsh colonies (British Birds 60:61–62).

Little Shearwater *Puffinus assimilis* (including Audubon's Shearwater *P. lherminieri*). In the North Atlantic W. F. C. describes four seen at 39°N. 72½°W. on 21 August 1964, and again at 32½°N. 70½°W. on 14 September 1964, the season when birds from the West Indies come north over the Gulf Stream. Further south D. S. recorded "countless" birds five miles west of Grenada on 8 March 1965; ten, one with dark patches at the side of the breast, at 13°N. 62°W. on the 23rd, and a thousand at 13°N. 61°W. on the 26th. Travelling south to Buenos Ayres in 1964 P. W. G. C. saw a series of black-and-white shearwaters at 5½°S. 34°W. on 31 August, 22½°S. 39½°W. on 3 September, 26°S. 43½°W. to 23½°S. 41½W. on 12 September, 15½°S. 37½°W. next day, 7½°N. 53½°W. on 19 September and a dozen at 10½°N. 59½°W. on 20 September, a good many of which may have been Manx Shearwaters on their southward migration, though the last may have been Audubon's. In the Pacific J. B. M. reports one, and possibly later flocks, at 5°S. 117½°W. on 29 October 1964, and a few at 24°S. 178½°E. on 31 December 1964, and R. M. H. one at 33½°N. 137¾°E. on 19 September 1964. Dr. D. A. Bannerman has also recently documented the collection of a nestling in the Azores in April, confirming that it breeds there, and unusually early in the year (Bulletin of the British Ornithologists' Club 84:111–112).

STORM-PETRELS: FAMILY *HYDROBATIDAE*

General publications include a review of the occurrence of albinistic feathers scattered in the plumage by L. F. Baptista (Condor 68:512–514), an account of the time of appearance at St. Kilda by W. E. Waters (Scottish Birds 3:73–81), and of the habit of the birds of the Galapagos of visiting the colonies by day by J. B. Nelson (Ibis 108: 430–432). D. W. and B. K. Snow also describe the breeding behaviour of the Madeiran Storm-petrel *Oceanodroma castro* in the Galapagos in the Ibis 108:283–284; two populations breed at different seasons, one in December–January and the other in May–June, and the young take longer to fledge than on Ascension. R. W. Lewis describes the chemistry of the stomach oil of Leach's Petrel *Oceanodroma leucorhoa* in Comparative Biochemistry and Physiology 19:363–377, and K. H. Voous birds collected at Curacao on 17 January 1967 and in wing moult west of the Galapagos at 3°S. 112°W. on 19 September 1963 in Ardea 55:268–269, in addition to the long series we list in the table of birds examined in the hand. The fifth of those and several of the ones reported by

Admiral Ritchie whose photographs we published last year were also in various stages of wing-moult; the fifth and twelfth vomited surprisingly large fish, the first measuring 34mm. without the head and the second 68mm. long.

There is the usual plethora of sight records of dark, usually white-rumped storm-petrels which often defy either identification or classification. The most interesting records come from the North Pacific. M. E. J. first recorded four birds of Leach's/Madeira type at 36°N. 140°W. on 24 November 1964, a few possible Madeiran with prominent white rumps and a direct flight at 14°N. 99°W. on 9 January 1965, several all day at 17½°N. 111°W. on the 11th, more at 18½°N. 117¾°W. next day, two at 35¼°N. 125¼°W on 1 April 1965 (when there was also a smaller bird with a less prominent white rump but a similar square tail and flight which he thought might be a Galapagos Storm-petrel *Oceanodroma tethys*), more possible Madeiran, definite Leach's with divided rumps, and smaller ones like Wilson's *Oceanites oceanicus* with their toes showing beyond the tail, and a strong but darting flight at 22¼°N. 109¾°W. on the 8th, and then possible Madeiran daily to 13¼°N. 92¾°W. over the next three days. D. H. M. reported fifty Galapagos Storm-Petrels 35 miles south of Cocos Island on 12 August 1965, with diminishing numbers to 1°S. 106°W. three days later; and much further east a Wilson's Petrel at 29°N. 147°E. on 5 October 1965.

In the North Atlantic S. E. C. saw Wilson's Petrels and occasional Leach's from the West Indies when homeward bound in August 1964, with fifty Wilson's astern at 42½°N. 49°W. on the 12th; he comments that the white of the rump can be seen to extend well down on the flanks and that as usual the colour of the webs cannot be seen normally at sea. M. E. J. met the first three at 29½°N. 74½°W. on 18 April 1965, commenting that they showed their feet, and saw several with Grey Phalaropes *Phalaropus fulicarius* in summer plumage when leaving the Gulf Stream at 36°N. 74°W. next day. L. J. M. noticed forty birds pattering in the wake at 49°N. 17½°W. on 17 June 1965 which he identified as Leach's Storm-petrels, though possible British Storm-petrel *Hydrobates pelagicus* or Wilson's are more likely behaving like this there; E. D. M. also noticed thirty British Storm-petrels at 50½°N. 8½°W. on 11 July 1965. A Wilson's Petrel which G. S. R. had aboard at 6½°N. 57¼°W. off the coast of Guyana on 22 June 1965 of which the photograph was published in *Sea Swallow* 18:66 vomited a grey-white liquid and squeaked when handled; its wing-length was only 135mm., suggesting that it belonged to one of the small northern populations, possibly that of the Falklands.

In the Indian Ocean J. D. S saw six Wilson's Petrels off the mouth of the Hooghly on 11 May 1964 and another on 30 May 1965, possibly the first recorded so far north in the Bay of Bengal, while on 22 August 1965 D. S. saw a hundred at 17°N. 41°E., next day birds all round the ship off Perim, some of them in moult, the day after uncountable numbers off Ras Fartak, and a thousand at 15°N. 52°E. on 30 September and again at 13°N. 47°E. next day.

There are also a number of records of all-dark storm-petrels. In the Indian Ocean Roger Bailey, Roger Pocklington and Paul Willis have recently reviewed the records in the Ibis 110:27–34, recognising the occurrence of Matsudaira's Storm-petrel *Oceanodroma matsudairae* and Swinhoe's Storm-petrel *O. (leucorhoa) monorhis*. D. S. has now also reported three of what appear to be the former in the wake all day

at 2¼°S. 46½°E. on 18 September 1965, and one at 3½°N. 49°E. next day; he described them as like Leach's Petrel, with a forked tail and bounding flight, but larger and dark, while Nagahisa Kuroda has recently reported on the anatomy of a specimen from the eastern Indian Ocean in the Miscellaneous Reports of Yamashina's Institute for Ornithology and Zoology 4:498–503, and M. E. J. saw one close under the bow at 36¼°N. 143½°E. on 15 November 1964, also commenting that it was all dark with a forked tail, a rather steadier and less erratic flight than the smaller storm-petrels, and pale primary shafts as well as edges to the secondaries. On the 29th he then saw its eastern representative, the Black Storm-petrel *Oceanodroma melania*, at 24½°N. 113°W., with two more close by at 14½°N. 95½°W. on 2 December 1964, when he commented on their direct, gliding, rather buoyant flight; and then many with phalaropes at 11½°N. 89¼°W. next day, thirty at 26¾°N. 114½°W. on 7 April 1965, fifty to a hundred following all day at 22¼°N. 109¾°W. next day, two hundred with Ashy Storm-petrels *Oceanodroma homochroa* at 18½°N. 104¼°W. the day after, another hundred falling to fifty at 16°N. 98½°W. on the 10th, and the last at 13¼°N. 92¾°W. on the 11th. W.A.K. also had dark petrels in this region, from 21°N. 107½°W. to 14½°N. 96½°W. on 4–6 April 1965 and again at 21½°N. 108°W. on 5 October 1965; one which he examined in the hand on the first occasion appears from its measurements to have been the local dark-rumped race of Leach's Petrel, *O. leucorhoa chapmani*. In the central Pacific J. B. M. saw birds which he thought might be the "lost" Samoan Storm-petrel *Nesofregetta moestissima* (=*N. fuliginosa*) at 7½°S. 145½°W. on 17 May 1967 and again at 10°S. 180°E. on the 23rd, which is not impossible although it must be remembered that Bulwer's Petrel among other similar species may also occur in these seas.

Further south, E. L. Mills has recently reported records of Hornby's Storm-petrel *Oceanodroma hornbyi* off Ecuador in October and remarked that fledglings from the still undiscovered breeding-places inland have been found in Lima in June and July (Condor 70: 87–88). M. P. Harris and T. de Vries also had a White-faced Storm-petrel *Pelagodroma marina* in tail moult on board near the Galapagos on 9 July 1967 and saw others between there and Peru shortly after (Ardea 56:193); J. B. M. saw scattered birds further west at 4½°S. 128°W. and 6°S. 134°W. on 14–15 May 1965, while in the North Atlantic S. E. C. had one at 40°29′N. 55°22′W. on 11 August 1964. He describes it as "hovering on outstretched wings, moving forward in jerks with the legs dangling together and the feet touching the water" among other details, a description which agrees with my own experience. L. E. Richdale also gives notes on breeding behaviour on Whero Island, New Zealand, in the Proceedings of the Zoological Society of London 31:1–86. D. S. reports a White- or Black-bellied Storm Petrel *Fregetta* sp. (that is, a white-rumped, white-bellied storm-petrel) in the Indian Ocean at 3½°N. 49°E. on 19 September 1965, while J. L. Throp has published a note on the White-throated Storm-petrel *Nesofregetta albigularis* (=the pale phase of the Samoan Storm-petrel *No moestissima* or *No fuliginosa*) in Elepaio 27:63.

DIVING-PETRELS: FAMILY *PELECANOIDIDAE*

E. M. van Zinderen Bakker has recently published important comparative notes on the breeding biology of the Common and Georgian Diving-petrels *Pelecanoides urinatrix* and *P. georgicus* where they breed

together on Marion Island in the South African Journal of Science for 1967:240–246. The first, the more northerly form, nests in burrows along the coast, while the second burrows in loose scoria slopes and plains at 3,000 feet inland. In a review of the group I have also raised the possibility that two forms of Common Diving-petrel may occur together in the New Zealand area, especially in the Chatham Islands, in which case it would have to be divided into two species, *P. urinatrix* being the northern one while southern populations would take the name *P. berardi* (Bulletin of the British Ornithologists' Club 88:77–85). L. E. Richdale has recently provided details of the breeding behaviour of these birds in New Zealand; the adults change over on the nest every night, and brood the chick for two weeks after hatching; it reaches its peak weight at 41–44 days and fledges at 60 days, while young birds breed at two years old and have a 70 per cent annual survival rate (Proceedings of the Zoological Society of London 31:1–86). R. H. Green has reported two Common Diving-petrels up to thirty miles inland in Tasmania in 1964, although unfortunately he does not comment on the weather (Emu 65:221). G. E. Watson has recently recorded that a Peruvian Diving-petrel *P. garnoti* taken off Valparaiso on 24 November 1964 had moulted all its flight-feathers simultaneously (Condor 70:182–183).

TROPIC-BIRDS: ORDER *PHAETHONTIDAE*

The late Professor R. Verheyen published some notes on the Pelecaniformes in general and the tropic-birds in particular in the Bulletin of the Belgian Institute of Natural Sciences 36:1–118. On 1 April 1965 C. C. A. reported three Red-billed Tropic-birds *Phaethon aethereus* at dawn and again later, and one during most of the day, at 19½°N. 90°E. in the northern Bay of Bengal; he had also seen them off Vishaknapatnam in the past; it seems possible that there may be an undiscovered breeding colony in this region, perhaps in the Andamans? In the Pacific M. E. J. had one at 16½°N. 105°W. on 10 January 1965, four at 18½°N. 104°W. on 9 April 1965, and one at 16°N. 98½°W. next day. Among records in the Atlantic, J. L. Bull has recently reported an occurrence on Long Island in the Auk 81:433–434. The two Red-tailed Tropic-birds *P. rubricauda* reported on board ships are also of interest; the first recorded by J. A. F. J. off northern Sumatra on 7 May 1965 brought up a half-digested flying fish some three inches (75mm.) long, and the second reported by P. W. G. C. in the Hawaii area on 30 July 1965 struck the rigging in the dark and vomited a squid measuring 85mm. x 25mm., while it was noticed to have numerous parasites. S. F. C. noticed White-tailed Tropic-birds *P. lepturus* for two days around 38¾°N. 62°W. during a period when there was a tropical storm east of Bermuda on 9–10 August 1964, while in the Pacific J. B. M. saw one at 23½°S. 172°W. on 10 November 1964, and D. H. M. two at 4½°S. 161°E. on 29 September 1965 and again at 7°N. 156½°E. two days later. W. Hetrick and G. Mclaskie have also reported in the Condor 67:186–187 that a stray which visited California chased and tried to mate with a glider.

GANNETS AND BOOBIES: FAMILY *SULIDAE*

These conspicuous and complaisant birds, an obvious gift to students, continue to receive much study, a good deal of it by J. B. Nel-

son, whose numerous publications are becoming hard to follow; it seems a pity that the material is not brought together in one better-organised book. General contributions on the group include a note by him on their clutch-size in Nature 210:435–436, and another by E. Curio reporting how panic-stricken young birds became unable to fly in the Journal fur Ornitologie 105:334–339.

Among our own records of the Northern Gannet *Moris bassanus*, R. M. H. saw an adult at 32¼°N. 30¼°E. off Alexandria on 21 August 1964, W. N. H. J. had four at 41½°N. 29°W. near the Azores on 16 December 1964 and six off Flores on 7 January 1965, and W. F. C. one at 38½°N. 72¾°W. on 15 September 1964. M. V. Hounsome has analysed records of movement off the coast of Ireland, and reports that the direction is constant throughout the year, west along the south coast, south in the west, and both ways in the north and south-west; it seems likely that these are mainly birds returning to the local colonies after fishing (Seabird Bulletin 4:7–20). Further west, W. H. Adams reports an out-of-season bird in North Carolina in the Wilson Bulletin 76:187, while in the southern hemisphere C. J. Uys and others have reported one infected with Aspergillosis in South Africa (Ostrich 37: 152–154). John Warham has described the Bass Strait colonies in Animal Kingdom 67:162–169, and J. L. McKean an increase at a colony in Victoria in the Emu 65:159–163, and K. Wodziki and J. Moreland the food at Cape Kidnappers in New Zealand, which involves coastal species of fish. C. J. R. Robertson has also studied Dominican Gull predation on Gannets in this area (Notornis 13:98–99, 10:393–403).

Bryan Nelson's studies on the Bass Rock have yielded among various facts and hypotheses the information that the first old males start returning in January; that they start to lay at the end of April, old birds laying first and laying heavier eggs; that lost eggs are replaced in six to 32 days; that normal incubation takes 43–46 days and about 82 per cent of the eggs are hatched (old birds being more successful); that 92 per cent of the young fledge at about three months, by which time they carry a kilogram of fat reserves to see them through until they can feed themselves; and that they return to breed when aged about five years old, the females starting first (Natural History, New York, 73:32–41; British Birds 59:393–419; Ardea 55:60–90; Journal of Animal Ecology 35:443–475; Ibis 106:63–77, 108; 584–626, etc.).

The Blue-faced Booby *Sula dactylatra* was reported by S. E. C. in the Gulf of Mexico at 22°N. 90°W. on 4 August 1964, by D. G. G. off Fernando Noronha on 2 December 1964, by J. B. M. near the Marquesas at 11½°S. 141½°W. on 2 November 1964 and again in force at 19°S. 175°W. in the Society Group on 6 January 1965, and by D. H. M. east of New Caledonia at 22°S. 174½°E. on 7 September 1965. Its breeding behaviour has been described by J. B. Nelson in the Ibis 109:194–231; it nests in small, scattered colonies, and the parents incubate in alternating spells of 25–30 hours. The chicks are guarded and are fed one to four times daily for the first month, after which they start to move around, although they return to be fed up to 50–60 days after they fly. The behaviour and method of temperature regulation has also been discussed by G. A. Bartholomew in the Condor 68: 523–535.

The Red-footed Booby *Sula sula* was reported in much larger numbers. P. W. G. C. saw over a hundred rounding Nevassa Island between Curacao and Haiti on 5 August 1964, and 22 at 11½°N. 63°W. on 22 September 1964, while D. S. saw 2,000 five miles west of Grenada

on 8 March 1965. In the Pacific J. B. M. saw it at 24½°S. 166°E. east of New Caledonia (this seems a very rich area) on 12 November 1964, and many at 18°S. 179°W. on 10 January 1965, while D. H. M. saw fifty at 17°S. 149°W. approaching Tahiti on 22 August 1965 and one at 22°S. 155½°E. in the Tasman Sea on 26 September 1965. E. Nieboer has also reported one far off the West Indies at 25¼°N. 62¾°W. on 19 January 1965 in Ardea 54:88–89. The flight behaviour at the colony has been described by T. Verner in the Wilson Bulletin 77: 229–234; the birds tend to leave the colony early in the morning and return late in the evening, and the flocks visiting it are smaller in the middle of the day. Only female frigate-birds attacked them to rob them of food, although the males would attack them to rob them of nest material. The breeding season and food in Hawaii is also described by N. P. and M. J. Ashmole in Ardea 55:265–267; most of them breed in the summer, but there is some scattered breeding, and two-thirds of the food was composed of fish, mainly *Exocoetidae* with some *Hemiplydae*, and one-third was composed of *Ommestrephid* squid.

Hundreds of Brown Boobies *Sula leucogaster* were found breeding at St. Paul's Rocks in the tropical Atlantic by D. G. D. on 3 December 1964. M. E. J. also reports them at 20¾°N. 107¼°W. on 30 November 1964. J. B. M. saw a few in the central Pacific at 19°S. 175°W. on 6 January 1965, D. H. M. one at 1°N. 159°E. on 30 September 1965, and J. B. M. a flock in the Indian Ocean off Ceylon at 7°N. 79°W. on 29 January 1965.

CORMORANTS AND SHAGS: FAMILY *PHALACROCORACIDAE*

This family continues to have a considerable literature though we get few important records. M. Tong and G. F. Potts report in British Birds 60:214–215, that the breeding season of British Shags *Phalacrocorax aristotelis* may start as early as November and J. A. Black comments on the predation of Common Cormorants *Phalacrocorax carbo* on inland fisheries in Britain in the Salmon and Trout Magazine 172: 166–180. The first breeding of Brandt's Cormorant *Phalacrocorax penicillatus* for Canada off Vancouver Island in June 1965 is reported by D. Stirling and F. Buffarn in the Canadian Field Naturalist 80L117–118, while A. M. Rijke comments on the feather structure of the group and its effect on water repellancy in the Journal of Experimental Biology for February 1968. The natural history of the Flightless Cormorant *Nannopterum harrisi* of the Galapagos is described by Mrs. B. K. Snow in the Ibis 108:265–280; it feeds on the bottom in shallow water in areas of upwelling on the western coasts of the islands, and breeds for most of the year, with possible maxima in April–June and October.

FRIGATE-BIRDS: FAMILY *FREGATIDAE*

P. W. G. C. provides some interesting notes on the Magnificent Frigate-bird *Fregata magnificens* at Punta Garden, Venezuela. He reports 150 on 22 August 1964, and then that some 800–1,000 mainly females or immature, appeared soon after dawn next day and started to soar, rising to heights from 200 to at least 1,000 feet, and eventually dispersing out to sea between 7.30–9.30 hours. It would appear that this must have been a morning dispersal to feed. It would be interesting to know more about the feeding behaviour out at sea, where the birds are seldom seen, though they were seen all the way across from Africa to the West Indies by Alain Bombard when crossing the Atlantic on a

raft. M. E. J. also reports three in the Pacific at 24½°N. 113°W. on 29 November 1964.

D. H. M. reports two Great Frigate-birds *Fregata minor* in the North Pacific at 8°N. 156°E. on 1 October 1965, five at 10°S. 131°W. on 19 October 1965, and three at 12°S. 139°W. next day; and J. B. M. a few at 18°N. 179°W. on 10 January 1965 and 6°N. 136½°W. on the 21st, while D. H. M. saw nine at 12°S. 137°W. on 20 August 1965. D. H. M. reports a Lesser Frigate-bird *Fregata ariel* south-east of New Caledonia on 8 September 1965. F. C. Sibley and R. B. Clapp recently described in the Ibis 109:328–337 remarkable ringing results for this species from the central Pacific breeding colonies, showing that the young birds disperse west throughout the Pacific, some even exceptionally reaching Siberia.

J. B. Nelson comments on the breeding cycle of the Great Frigate-bird in Nature 214:318; it includes 10–20 days for pair formation, 55 days incubation, and 130–160 days for the chick to fledge, after which it is fed on the wing for another 180 or more days. It follows that successful breeders only nest in alternate years. The birds have complicated group displays, and when they start to incubate sites and mates are often stolen; it was noted that 205 of 315 eggs were lost and 31 of 110 birds killed, mainly through the activities of other frigates interfering with nests.

PHALAROPES: FAMILY *PHALAROPOPIDAE*

In the North Atlantic K. D. A. L. reports small flocks of Grey Phalaropes *Phalaropus fulicarius* on spring passage at 41½°N. 58½°W. on 18 April 1965, and more small flocks of uncertain species at 40½°N. 70°W. on 22 May 1965. In the autumn he saw several Grey Phalaropes at 42½°N. 52½°W. on 15 September 1965, thirty at 45½°N. 60½°W. two days later, and several at 44½°N. 51°W. on 28 October 1965. P. W. G. C. saw birds which may have been phalaropes unusually far west in the tropical Atlantic at 4¼°N. 42½°W. on 28 August 1964 and again at 9¼°N. 56¾°W. on 19 September 1964. In the North Pacific M. E. J. has produced a long series of records, starting with a hundred supposed Grey Phalaropes (with indistinct markings on the back) at 40°N. 155°W. on 23 November 1964, some more at 20¾°N. 107¼°W. on the 30th, and again at 17¼°N. 101½°W. on 1 December 1964, several thousand Grey Phalaropes and some Red-necked *Lobipes lobatus* together with Black Skimmers *Rynchops nigra* at 14°22′N. 95°23′W. in the Gulf of Tetuantepac next day, and more again at 11½°N. 89°W. the day after. He saw one Grey Phalarope at 31°N. 133°E. on 31 January 1965 (an unusual date for it near Japan), possible Grey Phalaropes at 31°N. 128°E. on 14 February 1965 with possible Red-necks at 16°N. 120°E. and 13½°N. 121°E. on the 18th and 26th, some six flocks of a hundred, mostly Grey but possibly with some Red-necked at 36°N. 170°W. on 26 March 1965, more, all Grey, at 38°N. 162°W. next day, very many Grey at 18½°N. 104°W. on 9 April 1965, both Grey and Red-necked with 28 Wilson's Phalaropes *Steganopus unicolor* at 10°N. 98½'W. next day, and 300 Grey Phalaropes in summer plumage at 36°N. 74°W. on the 18th.

SKUAS: FAMILY *STERCORARIIDAE*

We have records of Great Skuas *Catharacta skua* from one seen by J. D. S. from the anchorage off Port Said on 22 March 1964, across

the North Atlantic to birds seen by W. F. C. at 37¾°N. 74½°W. and 38½°N. 72¾°W. on 1 and 15 September 1964. Robert Hudson has also recently reported in Bird Study 15:33–34 that a chick ringed on Foula in the Shetlands in July 1965 was recovered as far south as Guyana in May 1966, at the same time as an adult trapped in the South Shetlands in January 1960 and again in Graham Land in March 1961 was caught by a fisherman off Guadelupe some hundreds of miles further north. It has long been known that Southern Skuas stray far north in the Pacific; this is the first record indicating an overlap in the range of the northern and southern forms in the Atlantic.

There are numerous reports on the natural history of the Great Skua as well, including observations from the Faroes by J. C. Bayes, M. J. Dawson and G. R. Potts; and a whole series from the Antarctic by A. Caughley, B. E. Reid and C. R. Eklund; W. N. Bonner, an example of polygamy associated with a large clutch, and W. J. L. Sladen, R. C. Wood and W. B. Ennison, the return of ringed birds to the colony; apparently immature birds first return at two to four years old, and have been found breeding in other colonies when three and four years old, while the overall return rate of old birds to the colony in subsequent years reaches 96 per cent (Bird Study 11:265–271, Notornis 8: 194–195; 13:71–89; Scientific American 210:94–100; Bulletin British Antarctic Survey 3:41–47; Antarctic Journal 1:141–142). J. P. l'Hardy has also described the autumn passage south past Brittany (Penn ar Bedd 12 (1): 24–25), and there is a report of birds near the South Pole in Nature (Paris) 3351:274–276.

Two Arctic Skuas *Stercorarius parasiticus* were reported in Port Said approaches by D. S. on 18 August 1965, while M. B. C. saw one close to the ship at the north end of the Suez Canal on 30 April 1963, three in Suez Bay on 10 May 1963 and four there next day, one at 39¼°N. 17¾°E. on 16 March 1964, and another east of Tangier on 24 August 1964. M. E. J. saw several birds east of Japan at 38¾°N. 150½°E. on 16 November 1964, others with Pomarine Skuas *Stercorarius pomarinus* nearby at 31°N. 128°E. on 14 February 1965, at 35¼°N. 144½°E. on 21 March 1965, and one more at 36°N. 152½°E. next day. P. W. G. C. saw a Pomarine Skua at 9¼°N. 56¾°W. on 19 September 1964 and M. E. J. a number off the coasts of central America in winter. A. W. Palmisano and S. A. Gauthreaux report in the Auk 83:673 the collection of a Long-tailed Skua in Louisiana on 24 April 1965 in a region where there was only one previous sight record, from Texas, and M. J. Carter the occurrence of one in Victoria, Australia, in the Emu 66:69–70. It is curious how little information there seems to be about the southern winter quarters of this last bird so far, although there is an impression that they lie far south, possibly off South America.

GULLS: FAMILY *LARIDAE*

This family continues to be the subject of a growing volume of general studies, including aspects of their behaviour (N. Tinbergen, Behaviour 15:1–70. Zoologisk Mededelingen 39:209–223) and its effect on their feeding techniques (C. J. Feare, Seabird Bulletin 3:45–46), specific isolating mechanisms in the east Canadian Arctic (N. G. Smith, Ornithological Monograph 4), the effects of competition between gulls and on other birds on Finnish skerries (L. Bergman, Zool. Revy. 27: 58–77). Their variation has also been studied in Scandinavia by E. K. Barth (K. Norske Videnskaps Selskaps Forh. 37 (23):119–121; Nyt. Mag.

Zool. 14:7–83) and in Canada by A. and I. Macpherson (Arctic Institute of Canada Technical Paper 7), their increase in winter in Britain by R. A. O. Hickling (50 per cent in ten years; Bird Study 14:104), and the community breeding on the Pembroke islands there by M. Harris (Nature in Wales 8:56–58). An unusual concentration in the Tyrrenhian Sea has been reported by J. Viellard (Oiseau 37:148), fatal entanglements of gulls and terns in weed and fishing lines by W. P. Nickall (Auk 81:555–556), and the infection of young birds with *Mallophaga* by E. van der Broek (Ardea 55:112–114). There has even been a series of speculations in Elepaio 25:51–54, 96–98 by H. Frings and others as to why there aren't any gulls resident in the central Pacific islands.

The largest number of individual studies concern the Herring Gull-Lesser Blackback-Dominican Gull complex. G. Goethe reviews the Herring Gulls *Larus argentatus* of Europe in the Journal fur Ornitologie 104:129–141, and K. H. Voous includes North America as well in Ardea 47:176–187. R. A. Paynter reviews Kent Island and other North American population studies in the Bulletin of the Museum of Comparative Zoology, Harvard, 133:489–528. The cliff-edge and escape responses of young birds are discussed by J. T. Emlen in Behaviour 22: 1–15, the recognition of eggs by G. P. Baerends in the Bulletin of the Societé Scientifique de Bretagne 37:193–208.

The Lesser Black-backed Gull *Larus fuscus* has been the subject of studies of courtship, species isolation, breeding success and population growth by R. G. B. Brown in Behaviour 29:122–153 and the Ibis 109: 310–317, 502–515, while J. Wilson and M. Greenhalgh have observed it fishing for eels and B. A. Owen and J. Griffiths report it starting to nest on house roofs in Gloucester and South Wales, in the latter case with Herring Gulls (British Birds 58:510–511, 60:416, 426–427). M. P. Harris has published some comparative notes on the breeding biology in Wales of these two species and the Greater Black-backed Gull *Larus marinus* in the Ibis 106:497–502, while in New Zealand R. A. Fordham has published a series of papers on the history, status and some problems in the study of the Southern Black-backed Gull *Larus dominicanus*, A. Caughley has described it nesting inland in the hills, and C. P. H. Robertson their predation on the Gannets at Cape Kidnappers in Notornis 10:393–403, 11:110–126, 13:166–167, 14:144–153.

P. Moyle has described how Glaucous-winged Gulls feed along the Alaska salmon-streams in the Wilson Bulleton 78:175–190. J. G. Stranch and W. Thackaberry have described the occurrence of white patches on the wings of a Western Gull *Larus occidentalis* in the Condor 69: 397–398, 67:443; these white wing-patches are reported at intervals in a variety of the dark-backed gulls and it is not clear how many are due to the exposure of pale feather-bases when the wing-coverts are moulted. In Europe S. Braaksma has reviewed the distribution of the Common Gull *Larus canus* in Limosa 37:58–95, and J. D. R. Vernon and T. P. Walsh its winter roosting behaviour on the Severn Estuary in the Proceedings of the Bristol Natural History Society 31:173–184. In the Mediterranean M. B. C. reports an Andouin's Gull *Larus audouini* in a mixed gull flock on the shore 15 miles east of Taranto, southern Italy, on 10 March 1964, and at least three more in the Gulf of Patras on 7 October 1964, while A. Brosset and A. Olier report the presence of hundreds in the Chaffarines Islands off Morocco in Alauda 34:187–190. D. I. M. Wallace also gives an account of the Slender-billed Gull *Larus genei* in British Birds 57:242–247.

The behaviour of the Northern Black-headed Gull *Larus ridibundus* is discussed by N. Tinbergen in the Proceedings of the XIV International Ornithological Congress, 43–60, and its reactions to predators are described by H. Kruuk in Behaviour, Supplement 11:1–129. N. Ytre berg reviews breeding in Norway in Nytt. Mag. Zool. 4:5–106. The flock-feeding behaviour of Bonapart's Gull *Larus philadelphia* at a power station outlet on Lake Michigan is also described by L. L. Wolf and F. B. Gill in the Wilson Bulletin 73:389–390. The occurrence of the Indian Black-headed Gull *Larus brunnicephalus* with Northern Black-headed Gulls in Malaysia is noted by R. D. Etchecopar and F. Hue in l'Oiseau 36:65, while M. E. J. saw small numbers of the Chinese Black-headed Gull in Manila in late February 1965; he notes that it is a little larger than our bird, with a slightly longer heavier bill, and a very white fore-wing.

M. B. C. records large numbers of Mediterranean Gulls *Larus melanocephala*, most still changing into summer plumage, and two-thirds of them in their first winter, at Istanbul on 7–11 April 1962, and another 500, now many adult but some juvenile, feeding on shoals of fish within 20 miles of the Piraeus on 14–24 October 1963; E. J. D. also saw a small raft at Izmir on 16 June 1965, and R. M. H. 30–50 around 36°N. 14°E. on 6 December 1964. M. B. C. among others saw the Aden Gull *Larus hemprichi* at Aden, and also 50 as far south as Mombasa on 15 April 1963; R. Liversidge, T. S. Taylor and W. T. Ferguson have recently recorded the Red Sea Black-headed Gull *Larus leucopthalmos* even further south, in East Cape, South Africa, in the Ostrich 35:111–112. P. W. G. C. records two possible Little Gulls *Larus minutus* off North Holland at 51¾°N. 2½°W. on 7 October 1964, S. E. C. one off the coast of Sussex on 19 October 1964, R. T. H. an immature bird off Cape Villano on 10 December 1964, and M. B. C. various birds in the Mediterranean; according to J. van Impe in Alauda 34:63–65 this species is now increasing on passage in Belgium, with up to a thousand a day in late August.

The Silver Gull *Larus novaehollandiae* has been studied by M. D. Murray and R. Carrick in south-east Australia (C.S.I. R.O. Wildlife Research 9:160–188) who conclude that they are partial migrants whose numbers are controlled by the food-supply in the non-breeding season. It was found that they breed at 2–3 years old, and that their population is now larger than the breeding colonies can accommodate. The adaptation of Buller's Gull for nesting in floodable river valleys has also been studied by C. G. Beer (Ibis 108: 394–410); they use different sites every year, pair before occupying these sites, form only small colonies, and the breeding cycle of all birds is closely synchronised, and the young are mobile very early, so that the colony is both taken up and abandoned rapidly.

Recent European records of the Laughing Gull *Larus atricilla* summarised by P. J. Grant and a series of photographs with comments by T. Albrektson and P. Lindberg were published in British Birds 60:159–160, 489–490; birds recorded in Sweden in 1964, France in April 1965 and Kent in May 1966 may or may not be the same individual. A social display-flight of this gull was also described by R. C. Frohling in Bird Banding 37:206–207.

One Sabine's Gull *Xema sabini* was recorded by S. E. C. at 49½°N. 7°W. on 18 August 1964, and A. Y. N. saw a total of fifty between 46½°N. 9¾°W. and 42°N. 9½°W. off the west coast of Iberia on 2–13

September 1964. M. Ricard has also published an observation of a thousand with Guillemots, Sooty Shearwaters and storm-petrels in the Bay of Biscay off Belle Isle on 25 August 1965, with hundreds associating with gulls and phalaropes there on 26 September, and still forty on 3 October, while F. Roux adds additional records from Brittany in l'Oiseau 36:63–64. Further south, P. Zoutendijk records that they occur regularly off South Africa from December to March, and once in May, mainly within ten miles of the coast but up to 35 miles offshore, in The Ostrich 36:15. In the Pacific, M. E. J. saw a hundred at 18½°N. 104¼°W. on 9 April 1965, and more at 16°N. 98½°W. next day, while in Behaviour 28:110–140 R. G. B. Brown, N. G. Blurton Jones and D. J. T. Hussall have concluded from studies of its breeding behaviour that it is probably most closely allied to Franklin's Gull *Larus pipixcan*, but somewhat aberrant.

M. E. J. has a number of records of the Kittiwake *Rissa tridactyla* from the North Pacific. Immatures were first seen at 32¾°N. 150½°E. on 16 November 1964, and again at 42¼°N. 178°E. four days later, with adults at 41°N. 171¾°E. the day after. Returning in March, they were first seen all day at 35°N. 144½°E. on the 21st, and then daily to 36°N. 170°W. on the 26th. T. Kazuma records in Tori 18:260–266 that fifty were wrecked in association with an oil pollution incident in Nugata Prefecture, Japan, at the end of March 1965. Movements in the west of Britain are described by P. J. Hayward in Seabird Bulletin 3:58–63, and the Atlantic ringing returns are reviewed by J. C. Coulson in Bird Study 13:107–115; the birds travel progressively further away from home during their first three autumns, reaching the opposite side of the Atlantic, but then return to breed near their natal colony. Russian birds may possibly winter further north than British ones. He also reviews the influence of the pair-bond and age on breeding success in the Journal of Animal Ecology 35:269–279, and reports that the birds breed with more success in the centres of colonies in Nature 217: 278–279.

J. P. Hailman describes the Swallow-tailed Gull *Creagrus furcatus* of the Galapagos in Audubon Magazine 68(3):181–184, mentioning tern-like displays. Its breeding cycle is discussed by D. W. and B. K. Snow in the Ibis 109:14–24; individuals nest every 9–10 months in synchronised groups, so that breeding occurs in different places throughout the year.

TERNS: FAMILY *STERNIDAE*

The Gull-billed Tern *Gelochelidon nilotica* was recorded by M. B. C. in Kenya; at Aden; in the Gulf of La Spezia at 44°N. 9¾°E. on 15 November 1963; and on the east coast of Malta on 1 November 1963; with three on the north coast on the 24th and one there next day. He also saw a Caspian Tern *Hydroprogne tschegrava* going west ten miles to the east of Malta on 10 October 1963, and another three miles east of Tangier on 24 August 1964; D. S. also reports fourteen in the Red Sea at 17°N. 41°E. on 22 August 1965. M. B. C. reports 30–40 Common Terns *Sterna hirundo* flying north in Suez Bay on 11 May 1963; the breeding behaviour of this species and the Black Tern *Chlidonias nigra* in Poland is described and compared by L. Bochenski in Acta Zoologica Cracoviensia 9:423–449, and its breeding success on the north shore of the Gulf of the St. Lawrence is discussed by G. Power in Arctic 17:51–53. It is also of great interest that the virus

disease which affected Common Terns in South Africa in the spring of 1961 has now been shown by C. J. Uys and W. B. Becker to be similar to a form of Influenza A first detected in Chickens in Scotland in 1959 (Ostrich Supplement 6:443–451, Journal of Hygiene 65:61–65).

Arctic Terns *Sterna paradisea* were reported by W. F. C. at 31½°N. 74½°W. on 31 August 1964, with five at 37¾°N. 74½°W. next day, and two at 33¾°N. 72¾°W. and 32½°N. 70½°W. on 5 and 14 September 1964. D. G. D. also reports six off eastern South America at 35°S. 56°W. on 16 November 1964. Finn Salomonsen has recently published an interesting analysis of this southern sector of the migration of this species in Biol. Medd. Dansk Vid. Selsk. 24(1) suggesting that they make use of the favourable sector of cyclones to cross the Southern Ocean to Antarctic waters, where the adults moult during the southern summer in the region between 30–150°E. before returning west in the easterlies of the far south for their northward migration, while the young birds drift round the world before the west winds, possibly spend their first northern summer over the Humboldt Current, and do not return north until they have completed a circumnavigation and are approaching two years old.

We have numerous records of the Sooty Tern *Sterna fuscata* which help to elucidate its range at sea, though in some cases there may have been confusion with the Brown-winged Tern *Sterna anaethetus*. S. E. C. reported fifty Sooty Terns unusually far north in the Atlantic, at 31°N. 78°W., on 7 August 1964, while F. W. G. C. saw them from the Carribean to 7¾°N. 45½°W. on 28 August 1964 and again on the return voyage from 7½°N. 53½°W. on 19 September 1964. In the Pacific J. B. M. saw large numbers in the distance over fish at 17½°S. 141½°W. on 2 November 1964, groups at 21½°S. 177½°E. on the 10th and six at 24½°S. 166°E. on the 12th, some with noddies at 29°S. 168½°E. on 29 December 1964, and one at 26½°S. 173½E. next day, large flocks with noddies at 4½°S. 158½°E. on 16 January 1965, and then birds at 8½°S. 157°W., 11½°S. 163°E., and 12½°S. 158°E. on 19, 27 and 28 May 1965. R. M. H. also reported twenty in the South China Sea at 13°N. 114¾°E. on 14 September 1964, where A.J.P. also reported twelve at 16°N. 113½°E. on 4 July 1965, while D. S. reported five flocks of up to fifty at 1½°S. 48°E. and 6½°S. 45½°E. in the western Indian Ocean on 6–7 September 1965. A bird which came aboard in this area and another which did so in the east Pacific are reported in the tables. M. B. C. also reports some 500–600 Brown-winged Terns together with 200-300 white terns of doubtful identity and twenty Brown Boobies feeding over a shoal of fish at 4½°N. 99½E. in the Malacca Straits on 13 January 1962.

Some notes by N. P. Ashmole on the breeding of Sooty Terns at Ascension, where they lay every 9.6 months, and at Christmas Island in the Pacific, where they cut the post-nuptial moult short and lay every six months, will be found in the Proceedings of the U.S. National Academy of Sciences 53:311–318.

The Indo-Pakistan races of the Little Tern *Sterna albifrons* are discussed by H. Abdulali in the Journal of the Bombay Natural History Society 61:440–445, while R. A. Wallace reports in the Auk 83:138 a nest of the Black-naped Tern *Sterna sumatrana* with one egg on Wala Island in the Maldives on 23 April 1964, also A. J. M. Smith describes marking activities with Scottish Sandwich Terns *Thalasseus sandvicensis* in Seabird Bulletin 2:49–51, and J. H. Koeman and others report in Midd.

Rijksfacultei Landbouwwelenschappen Gent 32:841–854 the loss of 10 per cent of the young chicks and considerable mortality among older birds in the Dutch colonies in 1964–1965 owing to pollution by insecticides. S. J. J. F. Davies and R. Carrick report on the ability of the Crested Tern *Thalasseus bergii* to recognise its young in the Australian Journal of Zoology 10:171–177, N. P. Ashmole and H. Tovars also report on prolonged parental care of the young in the winter quarters by Royal Terns *Thalasseus maximus* in the Auk 85:90–100.

W. F. C. reports a thousand Common Noddies *Anous stolidus* among other seabirds south of the Virgin Passage at 17¾°N. 65¼°W. after a hurricane on 11 September 1964. C. R. Mason and W. B. Robertson report in the Auk 82:27 that others have also been blown as far north as Massachusetts after storms. Further south D. G. D. reported hundreds at St. Paul's Rocks on 3 December 1964, while in the Pacific J. B. M. saw some with Sooty Terns at 21½°S. 177½°E. on 10 November 1964, many at 29°S. 168½°E. on 29 December 1964, and several at 21½°S. 176½°W., many with Sooty Terns at 4½°S. 158½°W., and more at 1°N. 150½°W. on 1, 16 and 18 January 1965. In the South China Sea M. B. C. caught one on board at 8°N. 109°E. on 27 January 1962. Its length was 385mm., its wingspan 790mm., and it was infested with ticks identified in the British Museum (Natural History) as *Actornithopicus incisus*.

AUKS: FAMILY *ALCIDAE*

As usual, we have few significant notes on members of this group, which normally stay far north or close to the shore. Among reports in the literature the most curious is surely that by H. Gisels and H. Rabaeq in the Ibis 106:536–540, who suggest that the biochemical evidence indicates that our larger auks are more closely related to the penguins than the *Charadriiformes* as more generally believed; the technique by which they arrive at their findings is not very well explained. Otherwise attention in Britain has mainly been devoted to movements round the coast, arrival and departure dates at the breeding colonies, and census techniques, especially in connection with assessing the damage done by the Torrey Canyon oil pollution in Cornwall (T. R. E. Devlin, W. E. Waters and P. O'Connor. Seabird Bulletin 2: 24–25, 3:19–20, 4:38–45, 5:19–26).

Special studies include the investigation of the natural history of a colony of Guillemots *Uria aalge* in north-east Scotland by H. N. Southern, R. Carrick and W. G. Potter, and a study of the local distribution of bridled birds in that area by H. N. Southern which indicates a good deal of local variation in their incidence (Journal of Animal Ecology 34:649–665, 35:1–11); of the occurrence of northern races of the Guillemot on the British north-east coast by J. Mather (Naturalist 1966:81–84, see also 124); studies of the distribution and breeding biology of the Puffin *Fratercula arctica* in Norway and on the Murman Coast by S. Myrberget in Papers of the Norwegian State Game Research Institute, Series 2 No. 11, E. Brun in Sterna 7:1–17 and N. Skokova in Ornitologia 5:4–7; a report of a westerly population of Little Auks *Alle alle* breeding on Little Diomede Island, Alaska by W. J. Breckenridge in the Auk 83:680; a study of Cassin's Auklet *Ptychoramphus aleuticus* by R. B. Payne in the Condor 68:209–210, which shows that it breeds in full wing and body moult and holds the egg against the side without developing a brood patch; notes on the breeding of the

Rhinoceros Auklet *Cerorhinca monocerata* in Japan and the damage caused by dogs by M. Abe in Tori 18:174–179; notes on the dispersal of the Ancient Murrelet *Synthliboramphus antiquus* inland in North America by N. A. M. Verbeek in the Condor 68:510; on the discovery of the downy young of Kittlitz's Murrelet *Brachyrramphus brevirostris* close to Alaskan snowfields by M. C. Thompson and others in the Auk 83:349–351; and studies of the breeding biology and ringing recoveries of the Pigeon Guillemot *Cepphus columbo* by R. M. Drent in Ardea 53: 99–160 and R. R. Tenager in Bird Banding 37:288.

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Shorthouse, J. F., Lieutenant, R.N., H.M.S. Dampier.

Simpson, D. M, 2nd Officer, M.N.

Simpson, M. G., Captain, M.N., M.V. Sungate. Turnbull Scott Shipping Co. Ltd., London, E.C. 3.

Smith, R. A., Lt. Cdr, R.N., H.M.S. Hermes.

Standen, L., P.O. Air Fitter, R.N., H.M.S. Condor (R.N.A.S. Arbroath).

Suffern, C., Dr.—Ex.Surg Lt. R.N. (retrd).

Thompson, P.H., Lieutenant, R.N.Z.N.

Thorn, D. H., Midshipman, R.N., H.M.S. Ablion.

Tolhurst, D. C., Lt. (Jnr. Grade), PBR Naval Base One

White, A., Lt., U.S.N., U.S.S. Banner

Willis, P. R., Oceanographer, Vermont, U.S.A.

Corporate Member: H.M.S. Tartar.

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Dr. Autgaerdan, Paris.

SWITZERLAND—

Monsieur Raymond Lévêque, Geneva.

POLAND—

Prof. Dr. W. Rydzewski, Wroclaw.

NETHERLANDS—

Dr. J. Wattel, Amsterdam.

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NORWAY—

E. Brun, Esq., Tromso.

AUSTRALIA—

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J. D. Gibson, Esq., Thirroul, N.S.W.
Roy Wheeler, Esq., Windsor, Victoria.
J. R. Wheeler, Esq., Geelong, Victoria.
Julian Ford, Esq., Lynwood, W. Australiia.

NEW ZEALAND—

F. C. Kinsky, Esq., Wellington.
Dr. Bernard Stonehouse, Christchurch.

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Dr. Lawrence Giovando, Nanaimo, B.C.
Roger Pocklington, Esq., Halifax, Nova Scotia.

U.S.A.—

Dr. Calcolm Gilmarten, California, U.S.A.; Charles E. Huntington, Esq., Brunswick, Maine; Mark L. Libby, Esq., New Harbour, Maine; Peter W. Post, Esq., New York; Orville Crowder, Esq., Harpers Ferry, W. Virginia; Mr. R. Haven Wiley, Jnr., Rockfeller University, New York.

SOUTH AMERICA—

F. Haverschmidt, Esq., Paramaribo, Surinam.

SOUTH AFRICA—

Dr. J. M. Winterbottom, Rondebosch, Cape Province.

INDIA—

M. A. Badshah, Madras, 10.

W. GERMANY—

Dr. Herbert Bruns, Hamburg, 68.

ITALY—

Dr. Ing Sergio Salvatori, Rome.

THE ROYAL NAVAL BIRD WATCHING SOCIETY

BALANCE SHEET

YEAR ENDED 30th NOVEMBER 1966

THE ROYAL NAVAL

RECEIPTS AND PAYMENTS ACCOUNT

1965					
		Balance 1st December, 1965			
70 8 8		Cash at Bank			72 10 10
		Subscriptions : Current Year			
	30 4 0	Under Covenant	29 12 0		
	56 8 0	Other	100 19 9		
	3 4 6	Arrears	8 8 0		
104 11 6	14 15 0	In Advance	12 15 0		151 14 9
		Donations :			
	3 4 0	Under Covenant	3 8 0		
17 1 6	13 17 6	Other	6 5 6		9 13 6
		Income Tax recovered on 56 members' covenanted subscriptions and donations up to			
20 3 11		5th April, 1965. (see note 1). ...			19 4 5
11 1 0		Sale of Members Ties (7) ...			7 10 0
		Other Receipts :			
	124 9 1	Sales of 'Sea Swallows' ...	121 17 7		
138 9 1	14 0 0	Advertisements in 'Sea Swallows'	9 0 0		130 17 7
	67 8 4	Sale of 1965 Christmas Cards ...	25 8 4		
80 7 4	12 19 0	Sale of 1966 Christmas Cards ...	13 6		26 1 10
		(See note 2)			
— — —		Sale of Sea Passage Lists ...			3 0
		Sale of 'Seabirds of the South			
— — —		Pacific Ocean' (12)			6 0 0
£442 3 0					£423 15 11

Notes 1 : Refund of Income Tax amounting to £22.18.3 on members covenanted subscriptions and donations for the financial year ended 5th April, 1966, is at present receiving attention from the Commissioners of Inland Revenue.

2 : The balance of receipts for the sale of 1966 Christmas cards is not yet available for the inclusion in this years accounts.

3 : There is an amount of £100 still unpaid in respect of the purchase 'Sea Swallows' Volume 18.

I have examined the above Account with the books and records of the Society and

St. Mary Axe House,
56/60, St. Mary Axe,
London, E.C.3.
9 December, 1966.

BIRD WATCHING SOCIETY

FOR THE YEAR ENDED 30TH NOVEMBER 1966

1965					
25 0 8		Postage and Stationery			25 5 5
	242 6 0	Printing 'Sea Swallows' 1965 (700) (See note 3)	139 13 6		
	2 10 0	Census Sheets (1,000)	2 2 0		
	— — —	Bird in Hand Sheets (500) ...	1 12 6		
	2 10 0	Sea Bird Report Sheets	— — —		
	— — —	Land Bird Report Sheets (1,000)	3 17 6		
	1 1 0	R.N.B.W.S. Joining Forms ...	— — —		
	1 9 0	Minutes of 1965 Annual General Meeting	18 0		
	9 17 6	Bulletins 62 - 64	10 10 0		
	1 1 0	Bankers Order Forms	— — —		
	— — —	Compliment Slips (100)	12 6		
261 3 3	8 9	Notices re Bankers Order revision rates	— — —		159 6 0
15 0		Expenses of Annual General Meeting 1965			10 10 1
	2 0 0	Subscription British Trust for Ornithology ...	2 0 0		
	10 0	Ring Series 'B'	10 0		
4 10 0	2 0 0	Council for Nature	2 0 0		4 10 0
42 10 3		Printing 1966 Christmas Cars (1075)			30 6 7
33 6 0		Purchase of Members Ties ...			— — —
2 7 0		Bank Charges			1 1 0
		Balance 30th November 1966			
72 10 0		Cash at Bank			192 16 10
£442 3 0					£423 15 11

certify that it is correct and in accordance therewith.

(Sgd.) R. G. PEGLER,
Chartered Accountant,
Hon. Auditor.